THE AUTOMOBILE

WEEKLY NEW YORK—THURSDAY, APRIL 25, 1907—CHICAGO 10 CENTS

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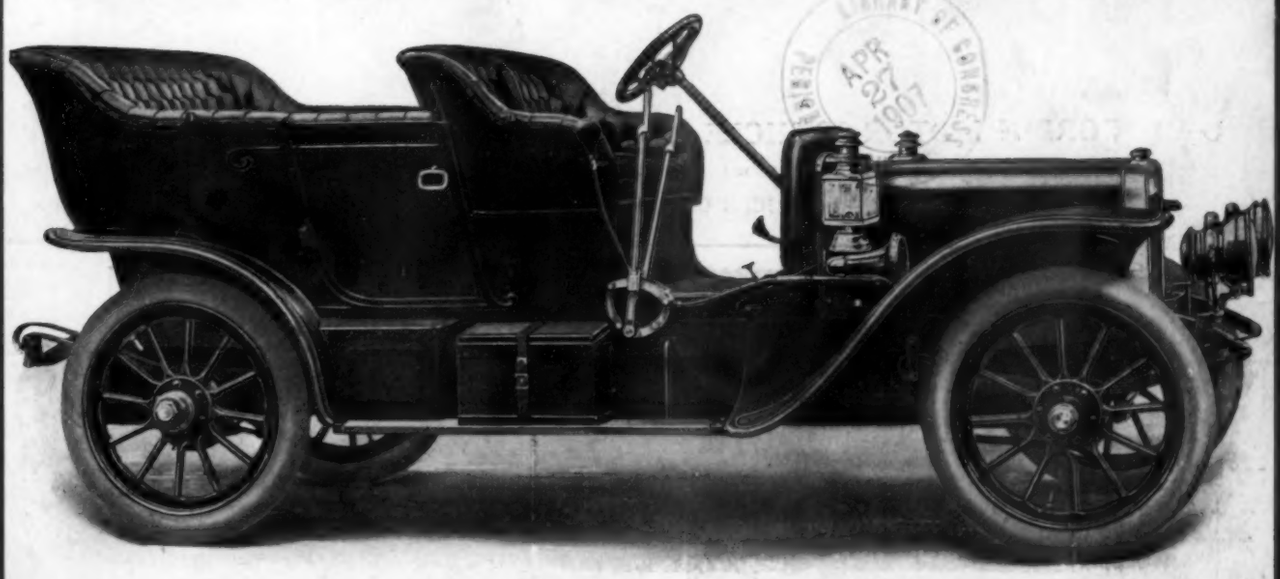


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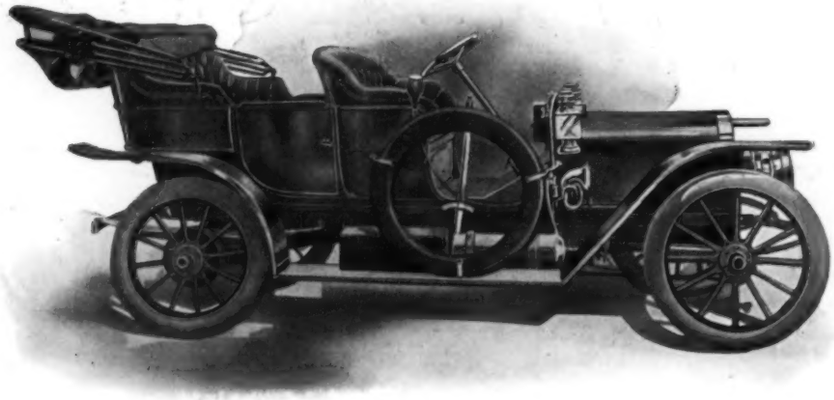

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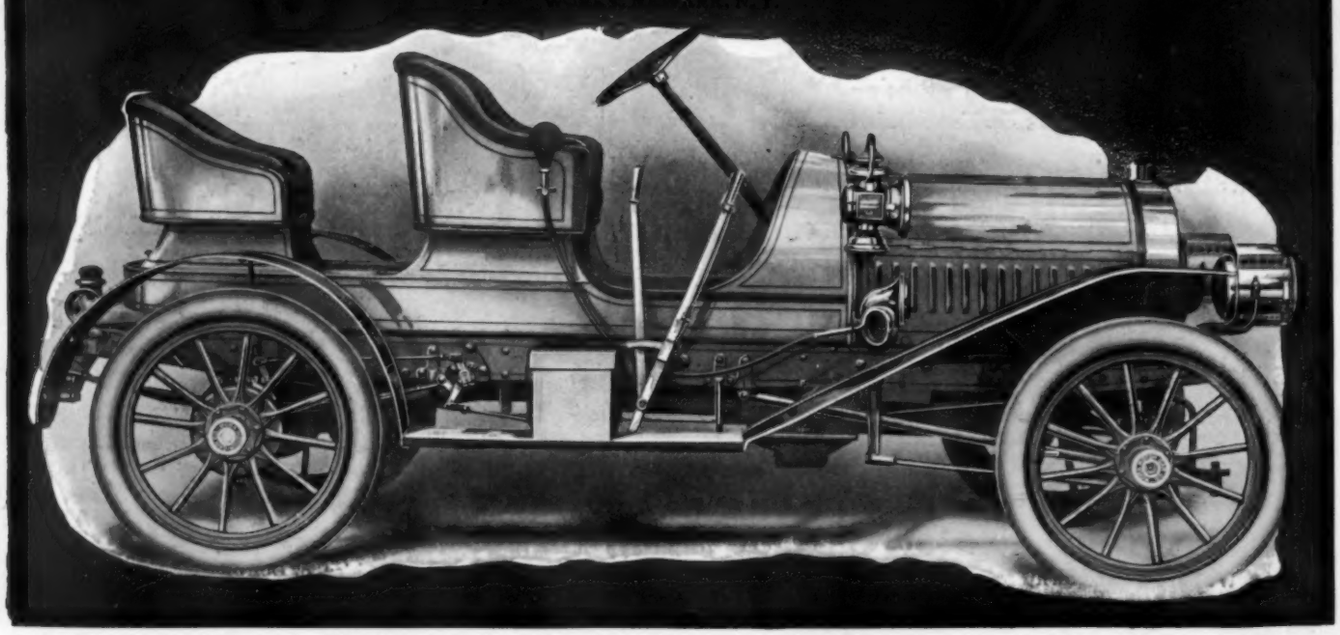

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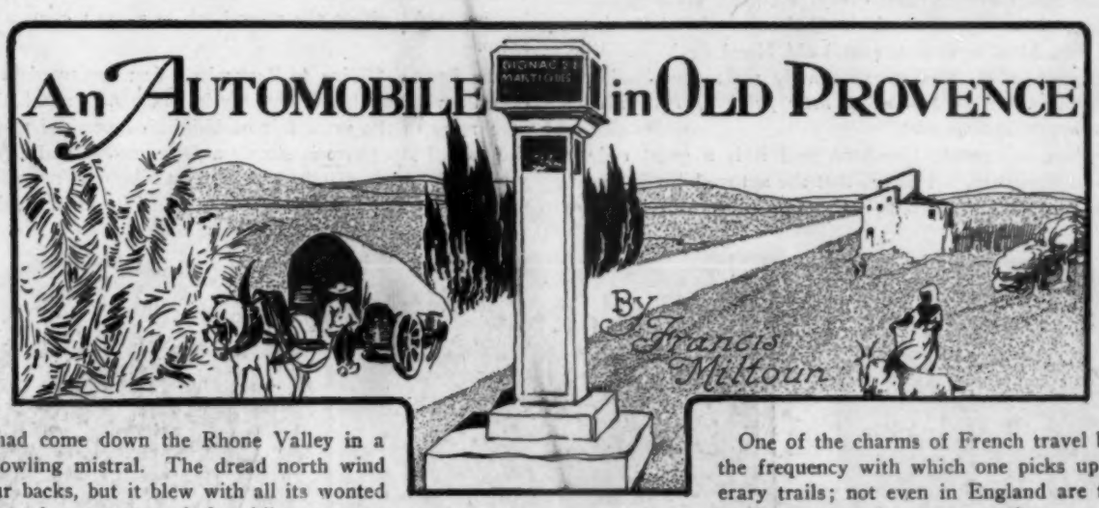
# THE AUTOMOBILE

## An Automobile in Old Provence




One of the charms of French travel by road is the frequency with which one picks up these literary trails; not even in England are they more numerous nor e'en so romantic.

WE had come down the Rhone Valley in a howling mistral. The dread north wind was at our backs, but it blew with all its wonted fierceness and gave a good five kilometers an hour more than our normal speed, though curiously enough when we had come up-river against it on one occasion our average of forty kilometers—which is not bad for a light-powered automobile—fell to twenty-five, with everything pulling well at that. The plague of the mistral is classic throughout all Provence, and there is a saying among the habitants of old that all Provence needed to make it a veritable Eden was the abolition of the Parlément, the suppression of the mistral, and the damming or drying up of the river Durance, which of all the enigmatical and torrential rivers of the world is the most unstable and fickle. Madame de Sévigné in her time was a good observer of things as they were, and she passed many strictures on the topographical features of France which have been very useful to us writers who have followed after. She called the mistral an unchained devil, and she knew, for it blows and howls around the Chateau de Grignan in an inconceivable manner, as it does through all this otherwise delightful region, when once it arises in its wrath.

Automobilists to the south of France had best come down by the Rhone and return north via the Pyrenees if time will permit. It is the only way to be sure of avoiding one of the stiffest winds that blow for a matter of 300 kilometers.

We were bound for the Italian frontier, and did not propose to linger by the way, but the spell of Provence was upon us and, after leaving Valence, and realizing the full force of the adage, *"A Valence le Midi commence,"* we fell into that languor of *laisser aller*, which comported little with scorching off kilometers at *toute vitesse*. Without question Provence is the true land of *la cigale*.

LES BELLES ARLESIENNES.

Before we knew it we were on the trail of Daudet's Tartarin and Dumas' Monte Cristo, and the hero-worshiping instinct of the literary vagabond came to the surface with such rapidity that we could not down it and so decided to make a little literary pilgrimage forthwith.

### A New Motive for Automobile Tourists.

Here's a new motive for automobile tourists; let them follow up some previously outlined literary or, for that matter historic, itinerary and get a pleasure and edification out of touring that they knew naught of when they were hying from one resort to another and stuffing themselves with imitation Parisian table d'hotes and wine at five francs the bottle and plus; when they could do far better, from every point of view, in the small towns through which they passed and didn't even know by name.

Old Provence is full of literary landmarks. Alphonse Daudet, Frederic Mistral, Félix Gras, and Dumas père have left the footprints of their characters as thick as falling leaves in autumn and no more pleasurable occupation can be conceived than the locating of some of these spots in the real.

With these thoughts in mind we pulled up before the Hotel des Empereurs at Tarascon, an hour before déjeuner, rather than push on forthwith to Arles as we had planned; *"les belles Arlèsiennes, Grecques aux yeux de sarazine,"* could wait.

The town of Tartarin is no myth, though Daudet's leading actor—whose chief pleasure was hunting imaginary beasts—was only given a domicile here because he had to live somewhere, and because the Provencal is more or less a guileless braggart and blunderer in all things. This is not saying that he is not a good sort; indeed, the reverse is the case, for he is the most lovable of all the indigenous inhabitants of the old French provinces. Daudet gave his worthy bachelor a residence here simply because he was a true child of the Midi, and Tarascon is as typical of the Midi of France as any other place still on the map.

*"Tarascon! Cinq minutes d'arrêt! Changez de train pour aller à Nimes, Montpellier et Cette!"* This is about all the average

traveler knows of Tarascon: then he suddenly remembers Tartarin and looks up the town in his guide-book to see what else it stands for.

### Nearing the Real Southland.

The automobilist is considerably better off. For a hundred kilometers he has been drawing up on the real southland until now olives and cypress trees in the landscape, and olives and garlic in his food (to say nothing of the beurre de Provence, the most strikingly pungent mayonnaise that was ever concocted) are no longer novelties.

Tartarin, as we know, had no real existence, but the entire locale of Daudet's tale is reminiscent of every kilometer of Tarascon's cobblestoned streets, and every jalousied veranda of its house fronts, and every stone of its old chateau of Roi René, the church of Ste. Marthe, and its proud old Hotel de Ville. Daudet's description of all this is exceedingly real; one should reread it on the spot: *"Tarascon, a little patch of Provence on the Rhone opposite Beaucaire."*

Twelve thousand people live here, and it is a great railway junction and workshop, but for all that the automobilist in search of a mécanicien will do well to wait until he gets to Arles, or to trace his wheel-tracks back to Avignon, provided his wheels will go round.

The Tarasconais resented loudly what they were pleased to call Daudet's caricature of them, but all the same Tartarin—*coquin de sort*—was not at all unlike many that one may see to-day sipping his *"Pernod"* or his *"Amer"* at the popular café of Tarascon's tree-shaded Cours or promenade at the aperitif hour.

Daudet described his hero as a "Don Quixote in the skin of a Sancho Panza," and the portrait will remain forever unaltered and unobliterated, and it will fit, too, many a real Provençal without being the least bit of a caricature.

He would be a great traveler—Tartarin, would have founded an empire across the sea, hunted lions in Africa, and done many other venturesome things—chiefly by word of mouth, but in the end he bought up a "dying exile" at Beaucaire, a scant kilometer away from Tarascon, across the ugly iron bridge which spans the Rhône.

### Where King René Once Reigned.

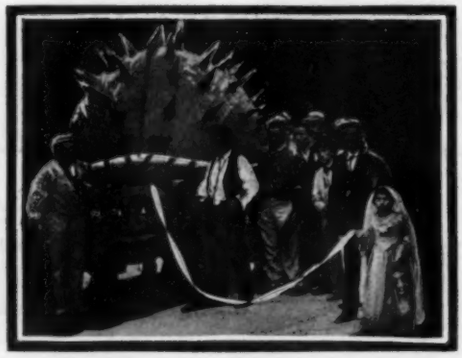
The Chateau de Roi René is the very ideal of a building-block chateau. It bathes its foundations in the surging Rhône and its crenelated battlements and its shot-scarred walls form a story-telling picture of much vivid history that has been made within sight of it.

But a step around the corner from the hotel is the Eglise Ste. Marthe, whose founder suppressed the ravages of the dreaded "tarasque" all through the neighboring region. The "tarasque" was a beast, a sort of a cross between a dragon and a reptile, of enormous size, who lived only by devastating the country round-about of its crops and even beasts and little children. There are two yearly fêtes which celebrate the suppression of this hungry monster of days gone by which are as quaint and curious ceremonies as the dragon processions of the Chinese. The "tarasque" of to-day is led in chains tranquilly through the streets, but his tail lashes out as of yore and the groans and growls terrify the young idea as they did the fleeing Tarasconais of all ages long ago. "The good king René" inaugurated the fête in 1469, and only when a parsimonious board of city fathers gets into office it is still a yearly event which draws crowds in thousands from all over Provence.

At Beaucaire, on the opposite bank of the Rhône, is the fine ruin of a crumbling old chateau contemporary with that of Tarascon, but perched high on the river bank in a most commanding situation.

The famous "Foire de Beaucaire," first instituted in 1217, was once the rival of that of Guibray in Normandy, and both were the precursors of the great fair of Nijni-Novgorod of to-day. Now the fair of Beaucaire is simply a *foire-marché* and a *fête-foraine* such as hundreds of others to be seen all over France, but within a hundred years it still reflected some of its former splendor and magnitude when merchants came from Persia and the Indies and Arabia and Constantinople to vend their wares in this turgid Rhôneside town.

BEAUCAIRE, FROM THE RHONE.



THE TARASQUE.

CHATEAU OF KING RENE.

### Tracing the Count of Monte Cristo's Footsteps.

Leaving this little corner of Daudet's country behind, not having been able to locate his *"Moulin,"* which we had always suspicioned was in these parts, but which we were assured had not a real existence, we set out to trace the footsteps of Dumas' Edmond Dantes of Monte Cristo fame in the immediate neighborhood.

Disguised as the gentle Abbé, Dantes came here to the banks of the Rhône to pay a surprise visit to the unworthy Caderousse and his still less worthy spouse, two flinty-ribbed and harder-visaged characters of fiction which have never been excelled as portraits of villains by force of circumstance.

Caderousse and his wife had become inn-keepers at Bellegarde after having fled the tailor-shop in Marseilles, a dozen kilometers from Beaucaire on the Montpellier road.

The beauty and charm of these byroads of the south of France is that no matter how unfamiliar they may previously have been they invariably seem like old friends to the automobilist by reason of the facility with which he finds his way over them—great long silent stretches of marbly-white road, and often with ten kilometers straight-away without so much as a ***caniveau*** on them.

Automobiles are frequent enough passers by and through Bellegarde, but literary pilgrims are few. At any rate, there is no house there to-day corresponding to the mean, rough little inn beside the canal wherein Caderousse and his wife plundered witless travelers—the Hotel du Pont du Gard. There is an inn of

sorts, the Hotel Gédéon, and Dumas' description of its sun-burned, lonesome surroundings is good enough to fit. The only thing that doesn't apply is the fact that there is a fair sort of accommodation to be had, or at least a plentiful and gratifying meal may be had, with astonishingly good wine grown on the vineyards roundabout. Anyway, we were glad we came; it was an entirely untouched and unspoiled little corner where the thousand souls who call Bellegarde their home for the most part of the year while away their existence and read "Lou Armana" as regularly as the head of the New England farmer family, snow-bound in winter, reads the "Old Farmer's Almanac."

HOTEL DU NORD, ARLES.

**Frequently Pass, But Do Not Stop.**

Automobiles frequently pass this way, but despite the old-world charms of the place, they seldom stop, judging from the commotion which our modest outfit brought about. The maid of all work at the inn was so staggered and amazed that she treated us with that fear and deference that she might have had for a stranger from Mars, glancing inquiringly from ourselves to the machine. *"Dame!"* she said, *"vous allez si vite, avec cette machine là. Combien pouvez vous faire de kilomèters dans une heure?"* "Oh, forty or fifty," replied the author of these lines—the chauffeur. *"Oui. . . . c'est beau, cette chose là! Mais est-ce que ce n'est pas dangereux?"* Well, sometimes, perhaps, it is, but we assured her we were most temperate in all things and would not even run over a *belle poule* if we could help it.

Within an hour we were at Arles and settling down for the night at the Hotel du Nord on the Place du Forum—not the Hotel du Forum on the opposite side of the square, but the competing establishment which has a portion of the old Roman forum built into its outer wall.

For a fact, there's not much choosing between these two hotels; they both lack the character and local color of the country, and have in recent years been furbished up and improved over what they once were until they are simply ordinarily good large-town hotels and nothing more, even though they be efficiently conducted. Garage accommodation is good at each, though limited.

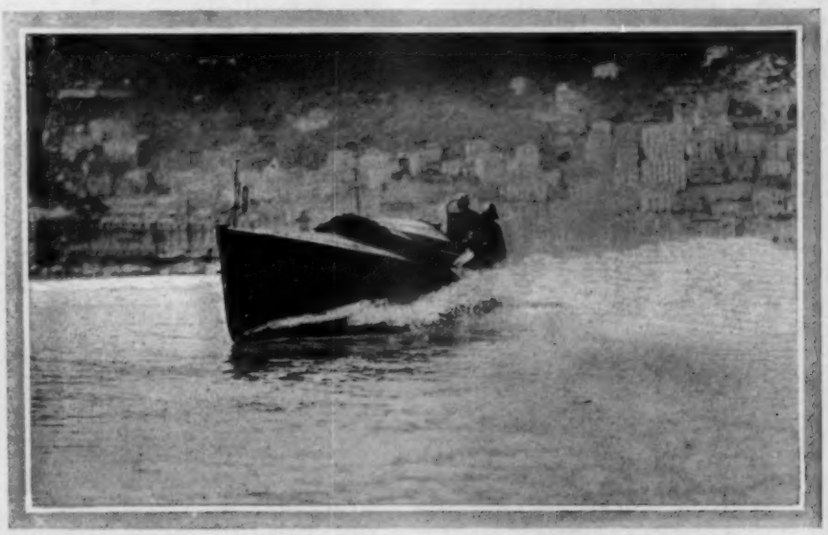
Arles is an anomaly. Its hotels and cafés and some other things are modern and comport little with the very substantial relics of Roman arenas, tombs and palaces which link the city so closely with the romantic past, but for all that Arles is the most fascinating, though perhaps not the most livable, of all the towns of Provence, not the least of its attractions being the beautiful women with their old-time Greek profiles and their little top-knot coiffes, so dainty and charming that the susceptible—automobilists and others—put them well at the head of nature's portrait gallery of beautiful women.

[*To be continued.*]

# WINNING THE MOTOR CHAMPIONSHIPS OF THE SEA

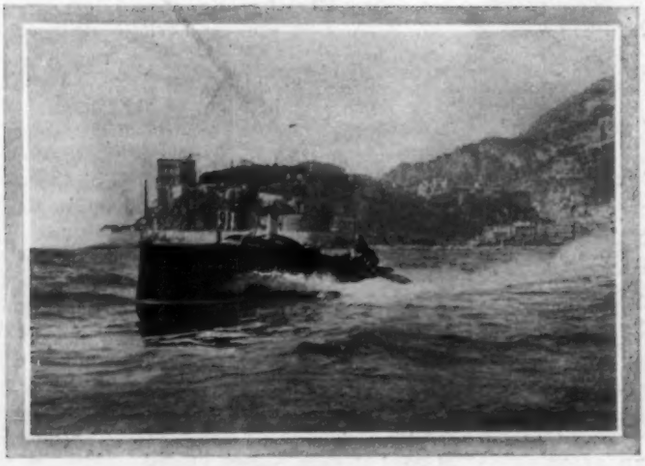
MONTE CARLO, April 16.—A blue sky, a brilliant sun, the water unruffled by the slightest breeze, and a dense crowd on the steep banks of Monaco Bay, were the accompaniments to the first day's racing of the fourth annual international meet.

Excitement was high when the six racers in the 26-foot class lined up for the 50-kilometers contest. *La Rapière II.*, the Panhard and Tellier combination, was the favorite; *Fiat XV.* and *Itala* were the Italian champions; *Seasick*, Itala engines and French hull; *Mouvette*, French hull and engine, and *Anadyomene*, a Franco-Italian craft, were looked upon as less formidable opponents in this contest.



PANHARD-TELLIER WINNING 200-KILOMETER CHAMPIONSHIP.

At the last moment *Anadyomene* starboarded her helm and made for port; evidently her crew feared a recurrence of the previous day's proceeding, when, owing to her high Delahaye motor, the boat capsized. Soon *Rapière II.* and *Fiat XV.* were in the lead, rushing over the glassy surface at an amazing speed. The French boat made a better start, and maintained her advantage for some time, but seemed to be losing slightly to the *Fiat*. Tellier, however, shaved his boat round the buoys in a masterly manner, while the Italian boat went about very clumsily. At the end of a round the *Fiat* missed fire a few times, stopped, but a second later was off again. The second had lost him his position, however, for the *Rapière*, with its Panhard motor turning with clockwork regularity, had got far ahead, and Baron de Caters had pushed his *Seasick* into second position. Tellier had no longer a serious competitor, and finished the race a good first. *Seasick* and *Fiat* continued to struggle for second position, and it was not until the fifth round that *Fiat* got ahead of her rival; had she been better steered round the buoys she would without any doubt have made much faster time, despite the trouble with her carbureter. *La Mouvette*, with her 24-horsepower Mutel motor, was no match for the more powerful boats, and finished the race at an easy gait. *Itala* had to abandon the race owing to lack of water circulation. At high speed her bow was quite out of the water, and her water inlet, which was placed forward, was high and dry. *Rapière*, on the other hand,



MAIS JE VAIS PIQUER, WHICH WON THE CRUISER RACE.

maintained a perfect water line, and covered her fifty kilometers without any fuss in 55:55 1-5, or at the rate of 33.3 miles an hour, nearly fourteen minutes faster than last year's winner.

Twenty-one boats started in the 50-kilometers cruiser race, *Capolow III.*, with a Mutel motor, being first at the rate of 20.8 miles an hour. Nine finished, three abandoned, and the rest were running when the race was called off. The day's results were:

26-FEET RACERS, 31:06 MILES.

1. La Rapière II, Tellier Fils & Gerard hull, Panhard motor, 55:55 1-5. Average, 33.3 miles an hour.
2. Fiat XV, Caroni di Streza hull, Fiat motor, 57:36. Average, 32.8 miles an hour.
3. Seasick, Tellier Fils & Gerard hull, Itala motor, 1:1:50. Average, 30.1 miles an hour.

Owing to a heavy swell it was necessary to postpone the contest for racers on the second day, and even the cruisers were, with a couple of exceptions, unable to cover the fifty kilometers. The *Mais je vais Piquer*, a Swiss boat, took first prize

### Racers Make Fast Time in Bad Weather.

The big racers made their first appearance on the third day of the meeting in a 50-kilometers contest over a rather rough sea, when the *Panhard-Tellier* proved herself the fastest and the most seaworthy race that Monaco has ever seen. Seven started, but on the first round *Daimler III.*, the English boat, dropped out unable to stand the buffeting of the heavy sea at high speed. Thubron's craft, the *New Trefle* with a Brasier motor, had to give up on the second round, owing to weakness having developed in her hull just under the engine; at the same time *Daimler II.*, the wood boat constructed by Saunders and fitted with three six-cylinder motors by the Daimler Company, had to make for port in a pitiful condition. Chevalier Florio's *Jeanette*, with an Itala motor, abandoned during the third round; *Flying Fish* ran for home on the fourth round, thus putting all the British boats, which were looked upon as dangerous competitors in a heavy sea, entirely out of the race. France and Germany were left for the final struggle, the former represented by the *Panhard-Tellier* and the latter by the *Mercedes D. L.* The three-ton French craft, propelled by its 250-horsepower Panhard motor, was marvellous for speed and for seaworthiness. At thirty-four miles an hour she took the head seas in perfect style, cleaving the waves in a manner that called forth admiration from both friends and rivals. The *Mercedes D. L.* showed remarkable seagoing qualities, but her speed was much inferior to that of her rival. The French were jubilant, for their boat had, in bad weather, beaten all records established in calm water at any previous Monaco meeting. The official results were:

50-KILOMETERS RACE FOR BOATS ABOVE 26 FEET.

1. Panhard-Tellier, Tellier Fils & Gerard hull, Panhard & Lavassor motor, 54:27 1-5. Average, 34.2 miles an hour.
2. Mercedes D.-L., Decout-Lacour hull, Mercedes motor, 1:42:56. Average, 18.1 miles an hour.

In the cruiser section *La Lorraine* broke world's records by covering 50 kilometers at an average of 25 miles an hour. The boat has a Lorraine-Dietrich motor, and the hull was built by Perignon. *All'Erta*, an Italian boat with Fiat motor, took second place. The hydroplane race was devoid of interest.

### Panhard Establishes World's Long-Distance Record.

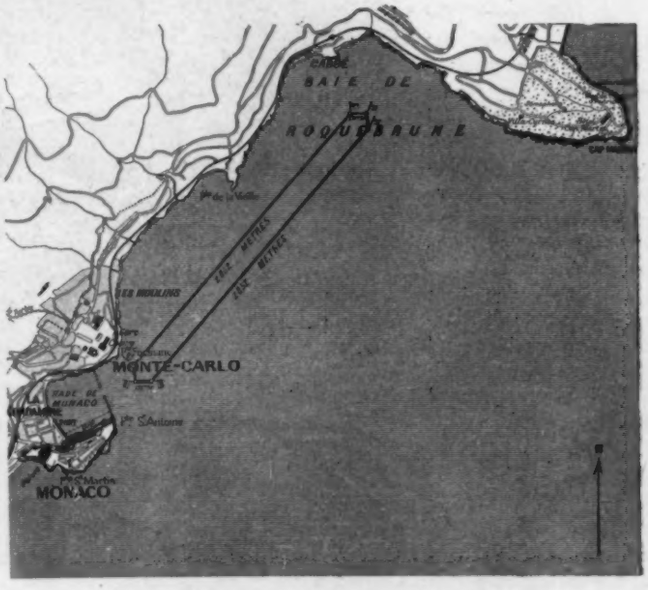
French jubilation reached its height when, in the championship of the sea, a 200-kilometers open race for all classes, Comte Robert de Vogue piloted the *Panhard-Tellier* to victory at an average speed of 35.01 miles an hour, the fastest rate ever attained by any craft. The same boat's previous average on the 50-kilometer course, and that of her companion *Rapière*, were surpassed by a large margin, while the performance of *Delahaye*, the victor in last year's championship, at 26.6 miles an hour, looked like a dog trot in comparison.

On a perfectly calm sea, and under the gaze of twenty thousand spectators, the twenty boats got away in a compact mass. *Panhard-Tellier* soon shook off its competitors, and was only harassed a little by the *Fiat XV.*, piloted by Taroni. The Italian boat, however, had not the fine lines of the *Panhard-Tellier;* her bow was too far out of water, and her skin friction was greater than that of her rival. For three rounds *Panhard-Tellier* remained ahead, with *Rapière* and *Fiat* following her.

There was an interesting match between *Ulysse* and *Sec*, both with Mors motors, terminated by the withdrawal of the latter at the fifteenth round. *Flying Fish*, the Wolseley racer, ran regularly, but was slow. Thubron's *New Trefle*, with Brasier engines, only showed speed at intervals, and the *Mercedes D. L.* proved more of a cruiser than a racer. After an exciting struggle with *Lorraine II.*, the Italian cruiser *All'Erta*, shook off her French rival and secured second place. The cruiser *Ulysse*, with a Mors motor, obtained third place. Official positions were:

CHAMPIONSHIP OF THE SEA, 200 KILOMETERS.

1. Panhard-Tellier, hull built by Tellier Fils & Gerard, engines by Panhard, 3:33:4. Average, 35.01 miles an hour, world's record.
2. All' Erta, cruiser, hull by Gallinari, engines by Fiat, 4:36:27. Average, 26.1 miles an hour.
3. Ulysse, cruiser, hull by La Sirene, engine by Mors, 4:59:49. Average, 24.8 miles an hour.
4. Flying Fish, racer, hull by Saunders, of London, engine by Wolseley, 5:14:13. Average, 23.7 miles per hour.
5. Adele, cruiser, hull by Baglietto, engines by Delahaye, 5:16:3. Average, 23.5 miles per hour.
6. Mercedes D. L., racer, hull built by Decout-Lacour, 7:53:6.
7. Pilote I, kerosene pilot boat, hull by Societé des Vedettes Automobiles, engines by N. W.




THE MARINE RACE COURSE AT MONACO.

# FIRST AUTO IN THE CANADIAN COBALT COUNTRY

By A MICHIGAN EXPLORER.

A TELEGRAM had come from Cobalt, Ontario, stating that automobiles were impossible because of the impassable roads. The manager of the Canadian Bank of Commerce had sent the information, which, instead of deterring the writer, made

WHEN THE CADILLAC MADE ITS DEBUT IN COBALT.

him the more eager to show that good roads were not an absolute necessity for a Model M single-cylinder Cadillac and that it could go anywhere where horses could travel.

The inhabitants of Haileybury, Ontario, center of the Cobalt or Temiskaming mining district, watched the entrance of the car into their city with wide eyed and all absorbing interest. Horses took an entirely different view of the matter and made strenuous efforts to get to the tall timber. Few people of Haileybury had ever seen an automobile before. The town proper is built on the side of a grade of about 15 per cent, and it was up, down, and sidewise on this grade that we were compelled to operate from the start.

Originally Haileybury was just a camp. The houses or shanties looked as though someone had stood out in the lake and thrown them at the side of the hill. If they landed facing north, south, east, or west, it was all right, but their proximity to each other did not matter at all. But last Fall a fire came along and now there's a new Haileybury on the map. It claims to be a city with streets. It has two: one of them runs from the railroad station to the lake; the other crosses it. Haileybury claims to be the center of all the Temiskaming mining country, as perhaps it is. It has several hotels, each one with a big, lively bar in connection; has a De Forest wireless telegraph station; a steam fire engine, and a free library and reading room. Truly it is metropolitan.

After having satisfied ourselves and the people of Haileybury that there was nothing in the town that we couldn't climb up or go over, we started to New Liskeard, another mining town some five miles away. In many instances the roads encountered were beyond description. Over these roads had been hauled the heaviest of logs the entire Winter, and on sleds that were not standard width by about twenty inches, necessitating the breaking through with one front wheel of our car of about four feet of snow and slush, and in many instances fairly dragging the body of the car on the ice and snow in the center of the road where it was firmly packed. Grades of from 15 to 20 per cent. were found to be usual instead of exceptional. We were frequently offered tows by the accommodating loggers and teamsters, but in no case were we compelled to accept them, as the car, by digging out and prying up, was able to make its own way. In only one instance on the road from Haileybury to New Liskeard did we meet any serious difficulty, and this was when the car was mired in snow and slush until the drive wheels fairly spun round, with nothing on which to hold. It was necessary here to secure logs, sticks, etc., and pile under the wheels for something like forty rods, enabling them to take hold and extricate the car. Two miles and a half of this road was endured when we found a place that by almost letting the car fly we could get down to Lake Temiskaming. We made the balance of the distance on the ice.

The return from New Liskeard to Haileybury was without incident of any kind, being made over the ice, driving the four or five inches of slush and water in many places 25 and 30 feet on either side of the car. The four and one-half or five miles were covered in some twelve minutes.

The following day a trip was undertaken from Haileybury to Cobalt. Quite a crowd of people collected about the car before starting, and the accommodating livery man offered to send teams along to drag us out of the holes that they predicted we would never be able to get out of under our own power. We thanked them very kindly, however, and started. In no place in the United States will roads be encountered such as are met with from Haileybury to Cobalt. One is either on the top of the mountain, or else plowing his way through a swamp, or sliding down, or crawling up, or skidding sidewise on a hill. In the distance of five miles there are only two places in which a team or car can turn around. It is either go ahead or back up.

In some instances the snow was soft and slushy and was four and as much as five feet deep. In others it had entirely melted, and the car was forced to make its way through from twelve to eighteen inches of water. In some places corduroy roads had been built through swamps and were now submerged in water, snow, and slush from a foot to three feet in depth. In no instances are these corduroy roads over sixty inches wide, and when one wheel went off the end it meant that it simply sunk out of sight and that the body of the car was resting on what was below; perhaps it was snow, perhaps water. At any rate, you could count on it resting on something that was not very good for your carbureter or your spark plug. In some places the snow was so deep that it was necessary to leave the car and dig roads through for the one wheel for which there was no passage before further progress could be made. One hill was encoun-

WORLD-FAMOUS LA ROSA MINE, WORTH $20,000,000.

tered of about a 23 per cent. grade. It was not long, but down either side of it there simply ran rivers through which it was necessary to drive the car. There was absolutely nothing for the wheels to catch hold of. Whenever we would get the wheels ready to run the body would be on the bottom or ground so hard

WINCHING" THE CAR UP A VERY SLIPPERY HILL.

that it would have torn it all to pieces to have attempted to drive uphill. After about an hour see-sawing back and forth on the hill we gained the top by winching the car up with ropes wrapped around the rear hub and tied to trees ahead of us. In going down, although the brakes held the wheels till they slid, it required the most skillful driving to avoid a smash.

The arrival in Cobalt was "one grand entry." Our first call was paid to S. H. Logan, manager of the Canadian Bank of Commerce. He was very much surprised, indeed, to see anything move without horses tied to it in that section of the country, and expressed his surprise in quite strong language. Several hundred people immediately gathered about, inspecting the car from all sides. Our Cadillac was the first auto they had ever seen. It was decidedly the first car that had ever been seen in the entire Cobalt region.

Cobalt we found to be purely a mining town, different from New Liskeard and Haileybury in that the houses had been thrown at greater random. The main street was something like twenty feet wide in its broadest places, and led into a public square. This square seemed to have been placed there by accident and left through force of circumstances. There are no saloons in Cobalt, yet one can buy anything in the way of refreshments that is desired. Law and order are maintained, but not a policeman can be seen anywhere. The one or two rich mines that have given the section its name for fabulous wealth are directly opposite the town of Cobalt, across the lake. One can stand on the porch of the Cobalt hotel, the leading hostelry there, and see the shafts of the famous Nipissing and La Rosa mines, can see the excavations of the Right of Way mines and Townsite mine, neither of which has thus far paid, and it seems as though will not pay; and you can but wonder why it is that there are some 2,000 people coming into this section each day, all to gain great wealth and returning without even their expense money in their pocketbooks.

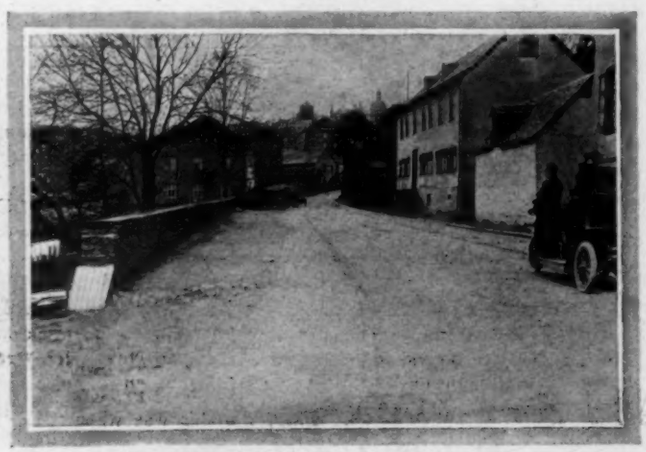
So far as the automobile possibilities are concerned, in this section of the country there are none. During the Summer months, when the roads in the United States are dry and hard, teaming is abandoned in the Temiskaming district because the marsh is so deep and boggy that even liverymen plying between Haileybury, Cobalt and New Liskeard are compelled to take their loads down the railroad track, finding out at the different stations whether or not a train is coming, or will catch them before they can get to a switch, and either going ahead or waiting accordingly.

There has been, and continues to be, agitation for some sort of macadamized roads from Cobalt to Haileybury, which is the center of this region, but either the Provincial Government is opposed to it on account of its railroad, or else not enough pressure has been brought to bear as yet to secure them. The entire section is truly an enigma. It is an old country. You will find people who have lived here all their lives, but the country seems still new and is new and undeveloped. Its silver may be the richest in the world; what there is of it, perhaps, is, but geologists say that it is but a pocket and will soon be exhausted. If that time soon comes the $300,000,000 of American and English money that is invested there will be sorely missed.

# CROWDED CIRCUIT FOR GERMAN EMPEROR'S RACE

THE ninety-two cars entered for the German Emperor's Cup will be started on June 14 at intervals of one minute on a 74-mile circuit near Frankfort. The starting point will be on a plateau between Saalburg and Kloster Thron, about sixteen miles from Frankfort. Generally the road surface is excellent, and there are a number of straight stretches on which fantastic speeds may be attained; the passage through some of the towns, however, necessitates a certain amount of caution, and there are a number of sharp turns which will test the skill of the drivers. There will be no neutralizations, and on the day of the race the course will be guarded by army veterans. To prevent accidents before the race minute regulations govern practicing. After a certain hour of the morning huge stones are rolled into the center of the road, making speeding impossible.

ROAD BETWEEN KONIGSTEIN AND OBERURSEL.



ENTERING THE VILLAGE OF WEILBURG.

# DISMOUNTABLE RIMS AND THEIR USEFULNESS

ALTHOUGH dismountable rims have given convincing proof of their usefulness and general efficiency as a racing adjunct, automobilists have been rather slow to adopt them, on the assumption that they were not suited for touring condition. Nobody denies the saving of time and labor in changing tires under the new conditions, but all motorists are not certain that the two metal surfaces will not rust and make dismounting an impossibility, or that the new conditions present the same degree of safety as the old. There are, in fact, several makes of dismountable rims on the market which leave much to be desired in the matter of security. A very severe test of dismountable rims was made by the 6,200-mile winter tour round Europe recently undertaken by Van Marcke as a try-out of a six-cylinder Hotchkiss car. The test provided all that the most exacting could demand: a fully equipped touring car, winter roads, long distance, mountain climbing, and fast running. Van Marcke's opinion is that the dismountable rim gives all that can be desired of it. He has only one objection to bring against it. Each time he removed the metal valve cap to pass an inflated tire over the fixed rim a certain amount of air escaped from the valve, although he was certain when the tires were inflated that he had correctly screwed up the valve. Thus after putting the inflated tire in position on the wheel he had to pump a little air in to make up the amount lost.

A close examination of the wheel by Michelin experts revealed the fact that the special type of metal cap used on dismountable rims was responsible for a slight leak at the valve under road vibrations. On leaving off the cap no further trouble was experienced, and a rag wrapped round the valve protected it from dust. To prevent a recurrence of this trouble a sleeve has been designed to slip over the valve stem before the cap is put on.

Further lessons learned by the long tour were that the projecting end of the bolts should be wiped before taking off the nut. Unscrewing and screwing with dust and sand on the thread is bound to result in wearing down the thread and may be the cause some day of an unfortunate breakdown. Before mounting the nuts a rag should be passed through them and, as a further precaution, a drop of oil or a little grease should be put on the ends of the bolts.

For fixing the complete tire on the wheel a special brace is provided, which, to the surprise of many users, is not made to fit the special countersunk security bolts used on these rims. The reason for having two tools where one might be thought sufficient is that the safety bolts should not be screwed up tightly until the tire is completely inflated. It is the compressed air alone which should bring the bolt into proper position and not an exterior effort on the bolt. Thus instead of the brace, which is a powerful tool, and might be used injuriously, a special key with which a relatively small effort can be exerted, is used for the safety bolts.

# "TROUBLES ON THE ROAD"

By A. D. HARD, M.D., Marshall, Minn.

MY little buckboard has been doing valiant service during the Winter months, when snow was deep and roads were almost considered impassable for anything on wheels. But I have not been exempt from "troubles on the road," and as there are many buckboards in use, it may be of interest to others to know how I emerged successfully from my perplexing predicaments. My first trouble came from the meddlesomeness of a "know-it-all" friend who undertook to increase the power of my motor by stretching the inlet valve spring. The result was that the suction of the piston was not sufficient to open the inlet valve except at high speed, and the motor could only be started by generously priming the cylinder with gasoline. The power was not increased. In my opinion, mechanically-operated inlet valves are the only proper kind, and meddlesome "know-it-alls" should be shot.

Most of the nuts on the buckboard are held in safety from shaking off by cotter pins, but some are not, and these began to work loose and drop off at most inconvenient times. *All* nuts that are vital to the running of an automobile should be crown nuts, with thin steel washers to adjust them so that the cotter pins would hold them secure from shaking off. The exposed position of the air intake resulted in snow and rain being drawn into the carbureter until the motor stopped. I tied my handkerchief over the intake loosely until I arrived home, then I placed a piece of rubber hose over the intake with the other end in a protected place, and had no further trouble. A ridge in the middle of the road struck the pan surrounding the transmission wheel, bending it up until it acted as a transmission brake. With my starting crank I pounded it down so that it would not touch the wheel, and at once got back my power. The screw which holds the chain together at the coupling dropped out and the chain came off. Borrowing a ten-penny wire nail from a nearby fence, I bent the surplus nail up over the chain so that it would not strike, and came home flying. A stone flew up and got caught between the chain and the sprocket wheel. Of course the chain broke. With two quarter-inch bolts two inches long, found in my "catch-all-box," I bolted the chain together around the jackshaft sprocket, and also to a brace on the frame, and, putting the transmission on slow speed, came home at my usual speed with only one drive wheel kicking the ground.

My batteries gave out one cold night ten miles from home. I woke up a farmer, got some vinegar and, boring a small hole in the asphaltum covering of the cells with my jackknife, poured about one tablespoonful in each cell. I had a hot spark all the way home. When stalled in a deep snowdrift I tied a string to the switch in such a way that I could break the current with a pull while in the rear of the machine. Then starting the motor on slow speed, I got behind and pushed. I have got out of mud holes the same way. I broke a front wheel off in the knuckle. A telephone message brought me a livery rig from town, and with a halter strap I suspended the front end of the buckboard under the rear axle of the buggy, and the team came home on the trot, the buckboard following gaily on its hind wheels. Once I got in some soft ground so deep that the rear wheels sunk to the hubs and then slipped. I borrowed two fence boards from an obliging fence nearby and crowded them well under the drive wheel sprockets. The little machine crawled out on its sprockets beautifully. Ran out of gasoline eight miles from a supply at night. I worked my think-tank pretty hard for half an hour, then mixed four ounces of ether which was in my medicine case with one quart of kerosene oil from a farmer's lamp can, and, say, you should have seen that auto "hit the pike."

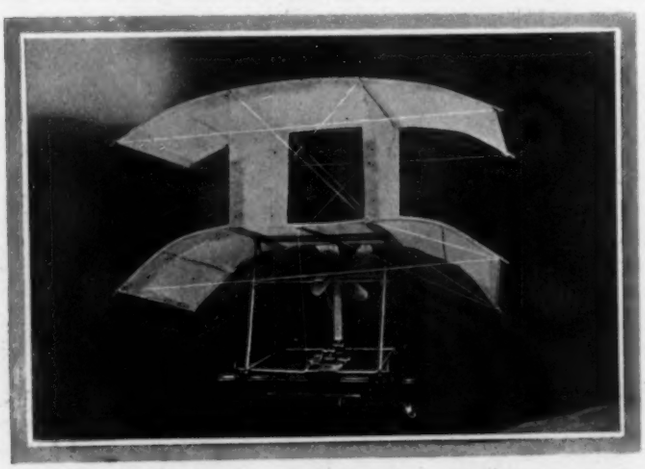
A leaking tire valve was most awfully persistent. I pumped up the tire and, detaching the pump tube from the pump but leaving it fast on the valve stem, bent it upon itself and tied it to a wheel spoke. On one occasion I lost my starting crank. Setting the transmission lever at high speed, I primed the cylinder generously with gasoline and gave the car a quick push of about three feet. The engine promptly began to do duty and I had to be quick to release the transmission.

THE ALBATROSS, AIRSHIP DESIGNED BY T. WEISS.

## FLYING MACHINE MODELS AT LONDON SHOW.

LONDON, April 15.—There is a really pathetic side to the exhibition of flying machine models forming a part of the automobile show in the Agricultural Hall. One old man tramped thirty miles from a quiet little village in the west with his cherished model under his arm. You may talk with a score of them about the hall, earnest, serious-minded men, who for years have been groping along, unaided, neglected, isolated, but always confident that they were on the verge of one of the greatest discoveries the world has ever known. A mere glance at most of the models is sufficient to show that the designer has not mastered the elementary principles of aerial flight and that he has been working blindly, a victim of his isolation. Fortunately the models remain models; had they to grow into full-size machines they might have a decimating effect. There may be hidden somewhere in the hall a machine that can do more than make an aerial jump, but we have not discovered it. There are many that are curious, many that show ingenuity, and just as many that are crazy. One of the curious type is shown by Mr. Pickering, a native of the West Indies who has devoted forty years of his life to the evolution of his pet. It is on the compressed-air principle and consists of a drum-shaped body with small holes at top and bottom and four fans inside, which cause atmospheric action similar to that of a bellows. Under the machine is a powerful propeller driven by an electric motor, and around it are six circular tubes, slightly curved rearwards; the air is forced down these tubes, and as they slant back air is driven rearwards and the machine sent forward.

A Frenchman has a four-winged machine, worked by a strong spiral spring. Two of the wings go up while two go down, so that the air, by being forced away from the wings as they meet, drives the model along. There is a weird looking creature with a fish-shaped body and two broad wings outstretched as in flight, all made of corrugated aluminum. The wings are made to flap by means of clockwork within the body, and in addition there are two propellers, one forward and one aft. Army officers play a considerable part in the exhibition. Major B. Baden-Powell has two or three rather promising models; Major Moore has two interesting models of winged-shaped flying machines mounted on miniature towers, with a double pair of wings, working one above the other in parallel. Captain Jones has an aeroplane which possesses more simplicity than can be found in most of the models. One designer has taken an albatross as his ideal, filled its body with machinery which gives a flapping motion to the wings. Another has worked on similar lines with a bat as his model. At the close of the show the models will be put through practical tests, but it is not likely there will be any startlingly practical results. The $50,000 which the *Daily Mail* offers for a flight from London to Manchester will not change hands for a long time yet. A French aeroplanist suggests the use of a small balloon with aeroplanes, as a measure of security in making experiments. To attempt a turn, an aeroplane must be some distance from the ground, and the failure of the engine at such a moment might be serious. A small balloon would prevent a violent fall, and its assistance in keeping the flying machine aloft would permit of observations of its actions being made and defects recognized.



FELL AEROPLANE, EXHIBITED AT RECENT LONDON SHOW.

A RENAULT AND ITS ROYAL SIAMESE OCCUPANT.

Dominique Lamberjack, of Paris, giving a demonstration run in a Renault car to Prince de Rabi de Rajaburi, son of the King of Siam. A stop on the way near the Park des Princes cycle track.

## LIGHT MOTOR FOR KNABENSHUE AIRSHIP.

TOLEDO, OHIO, April 22.—After a full winter's work, Roy Knabenshue has produced an original gas engine for his air ship. The motor, which develops from 12 to 16 horsepower, weighs only fifty-four pounds. It is of the two-cycle, air-cooled type, valveless, and will work with any carbureter. One of the features of the engine is a spark coil with six windings, instead of the usual primary and secondary. The carbureter throttle and spark timer are new features invented by Knabenshue, details of which have not been made public. The engine will be used for driving the steerable balloon on which Knabenshue has spent considerable time and labor.

## PRESIDENT BISHOP HAS SAILED FOR EUROPE.

Cortlandt Field Bishop, president of the Aero Club of America, has sailed for Europe, and will remain abroad until September. Mr. Bishop intends to devote a large amount of time to automobile touring, particularly in the Alpine districts. In his absence the executive head of the club will be J. C. McCoy, who was recently elected vice-president.

# AUTOMOBILE CHANGE GEARS AND THEIR JOURNALS*

By HENRY HESS, Member Society Automobile Engineers.

FIG. 9 is a three-speed gear, with a three-gear slider. The slider spool is indicated by the shaft passing through it. The center distances of the shafts as well as those between the gears and bearings are to scale, each division of the cross-section paper representing one inch.

Each gear-pair is given a Roman numeral, as I, II, III.

The journal loads at the bearings for each drive are plotted vertically over each journal to a scale of one division equal 150 pounds.

Light arrow joints marked with the same Roman numerals show the amount of each load. Solid arrow points with numbers as 306, 307 give the rated steady load and speed-tabular capacity of the bearings known by corresponding number symbols.

A glance will show the relationship of imposed loads to bearing rating. In some cases bearing choice has been governed by shaft sizes and arrangement of parts rather than by loads, which accounts for some variations in selection. Occasionally the length of a load line would extend beyond the confines of the slide; it is then bent over and the true length is the total of the parallel portions.

"E" indicates the engine or driving end.

Considering the value of Fig. 9 we see that with the 26-26 tooth gear-pair I in engagement, the upper left-hand bearing

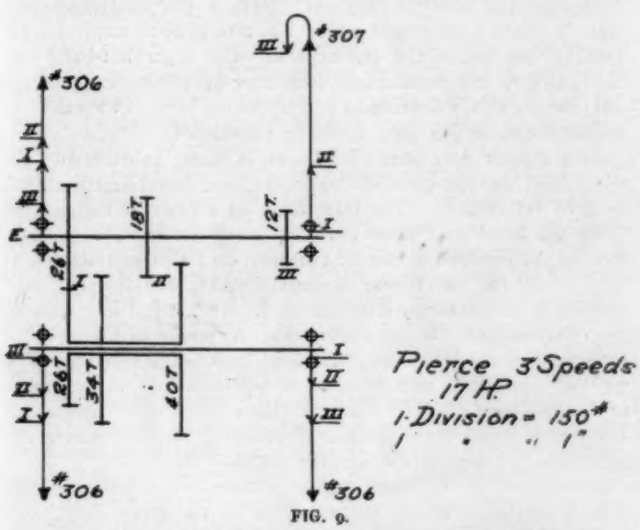



FIG. 9.

is loaded to the amount of arrow point I, which is about half the tabular steady load and speed capacity of bearing 306.

The load on the bearing at the other end of the upper shaft, due to this gear-pair, is very small, and indicated on the diagram as I at that bearing. On the lower shaft also the loads are well within the bearing ratings. The heavier loads on each journal are, counting from the top left to top right, to bottom left to bottom right, due to gear-pairs II, III, I and III. With one exception these approximate one-half the rated bearing capacity. The exception is the two-speed gear III load in the upper right-hand bearing, which somewhat exceeds the bearing rating. A similar condition is not unusual, as, for instance, on Figs. 11, 13, 16, etc. The conclusion must not be drawn that the other bearings are decidedly large, but rather that the relatively little use of this gear-pair, coupled with a slowing down of the engine and consequent reduction of actual piston pressure, favors this particular journal. Actual overloads to produce ball crushing are not to be expected of any bearing that is likely to be demanded by consideration of shaft size, etc., remembering that bearings of the medium weight series are usual for gear boxes unless abnormally large bearings are demanded by peculiarities of the mechanism, in which case the light-weight series comes under consideration.

In the three-speed gear of Fig. 10, it is apparent that shaft dimensions have called for bearings having relatively larger factors as compared with the loads imposed.

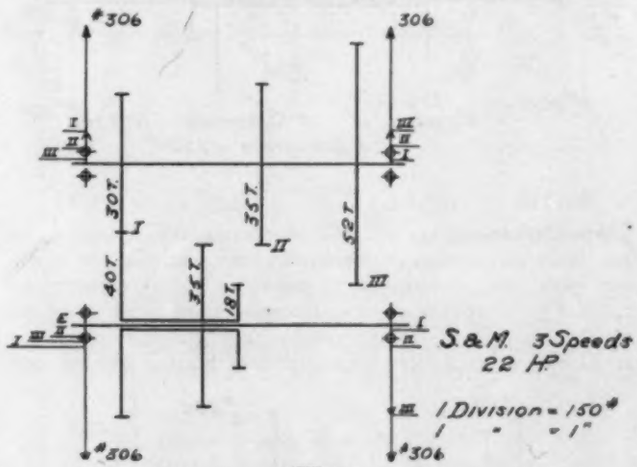



FIG. 10.

The four-speed gear of Fig. 11 follows the previous Fig. 9, in that the bearing values are about double the loads with the exception of the slow-speed load that shows up higher than the bearing rating.

In the four-speed set of Fig. 12 all of the loads are well within the bearing capacities demanded by shaft diameters.

Fig. 13 is another example confirming the previous ones.

Fig. 14 has two sliding gear sets for four speeds. The bearings demanded by the shafts are all well above the loads, including even the slow-speed load. The fact that all bearings may be of the same size is a distinct shop advantage, not counterbalanced by higher first cost of bearings, since, even though a size smaller for one or the other might be worked in, the difference in cost of these smaller bearings is inconsiderable.

A first example of a direct drive jaw engaging gear with one slider is this Fig. 15. This is the first deviation from the general

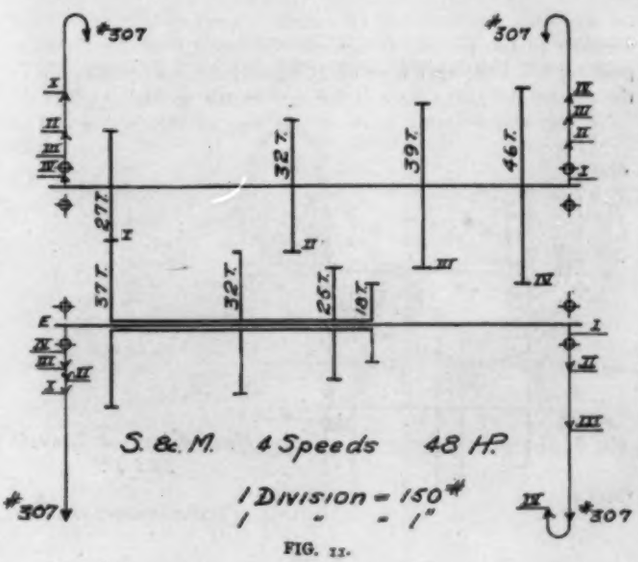



FIG. 11.

*Second part of paper read before Society of Automobile Engineers at New York; continued from issue of April 18.

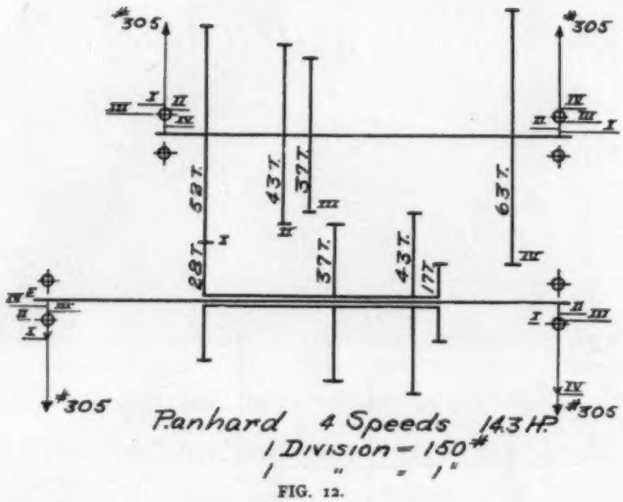



FIG. 12.

practice of employing bearings of the medium weight series, two from the light-weight series, No. 207, carrying the engine and spool; their larger bore is demanded by the necessity for size due to the drive shaft being journaled in the spool. Approximately, bearings having the same outside diameter in the two series may be used interchangeably; thus bearing No. 305 used

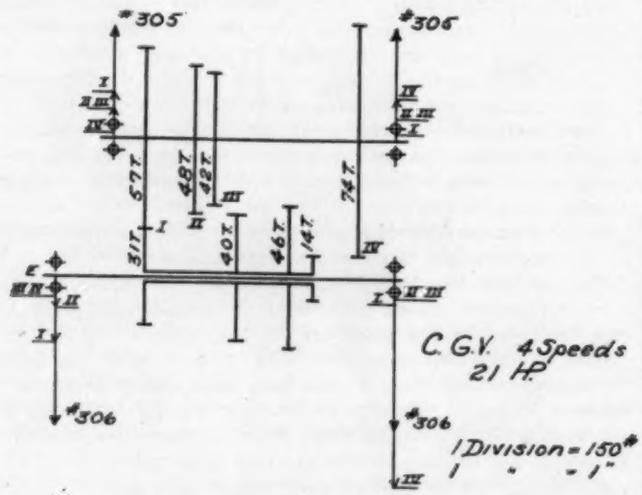



FIG. 13.

on the other journals has an outside diameter of 72 mm., and a rating of 620 pounds as against No. 207, of 72 mm. and 600 pounds; but the larger bore of 35 mm. of 207, as compared with the 25 mm. of 305, adapts it for use on the spool.

No. 207 will probably work in best also on the farther end of

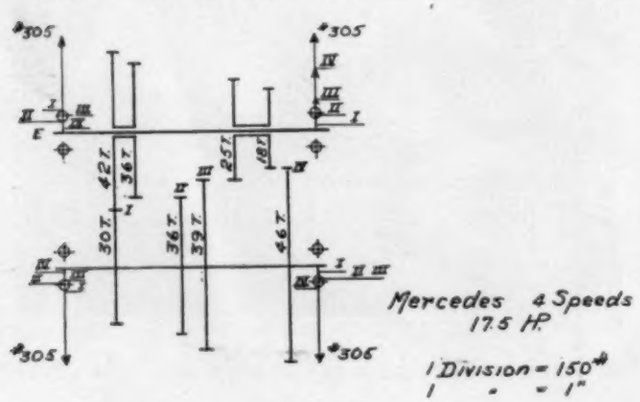



FIG. 14.

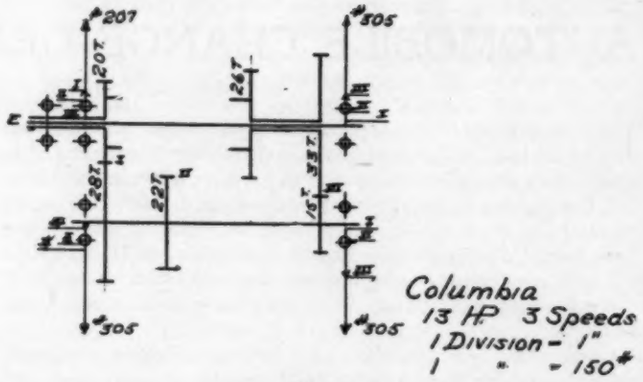



FIG. 15.

the spool, and will be ample, as its location subjects it to smaller loads.

This succeeding example, Fig. 16, confirms the previous ones; as do also Figs. 17 and 18.

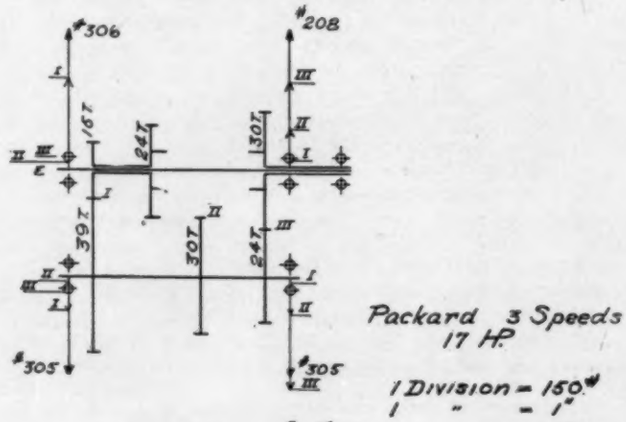
Fig. 19 is the first example of ball bearing use for the inner end of the drive shaft, where it is journaled in the engine shaft end. Rather restricted space consideration will naturally lead to the conclusion that this bearing (No. 305) would be relatively more heavily loaded, still, under the maximum condition due to gear set III—the second fastest—such load is within the bearing rating.

This is true also for Fig. 20. Here a comparatively small bearing of the light-weight series, No. 206, is quite ample for the outboard journal of the driving shaft—the upper left-hand one. If, however, any unbalanced couplings or other elements are carried near this, a bearing of corresponding bore of the medium-weight series, as No. 306, should be substituted.

As the spur gear part of Fig. 21 is along substantially the same lines as the previous examples, the bevel gearing only need be referred to. The thin direction arrows at the bearing below the bevel gear show that this is subject to radial load as well as the outward thrust of the gear, and also so mounted as to restrain the bevel gear against meshing too deeply. The magnitude of the thrust is measured from the shaft intersections to the arrowpoint. Remembering that one pound of thrust is the equivalent of three pounds radial load on a bearing of the radial type, an addition (not indicated) of four times the thrust length to the maximum radial load IV shows that the capacity of No. 207 is pretty well used up. Personally, I should prefer No. 307 to the 207 used in the German example.

The thrust of the bevel pinion is taken on a collar bearing 6-R, which, as is shown by the arrow on the thrust line, has a factor rather better than two at the speed in question.

Figs. 22 and 23 are also bevel gear sets, in which the thrust bearings of the collar type have factors slightly less than 2 for Fig. 22, and about one and one-quarter for Fig. 23.




G. 16.

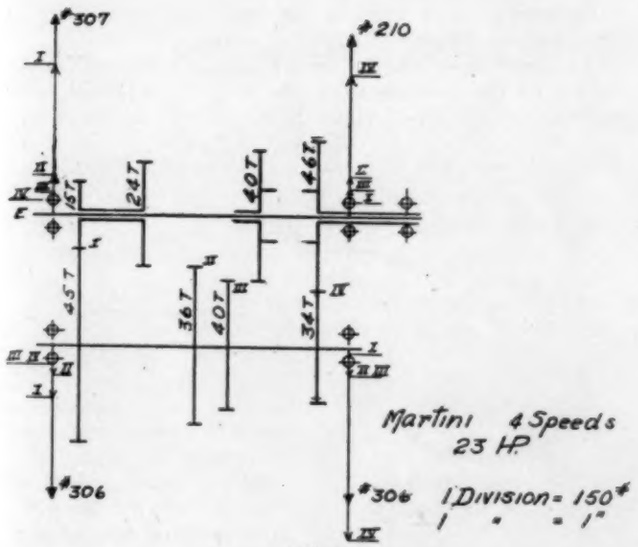



FIG. 17.

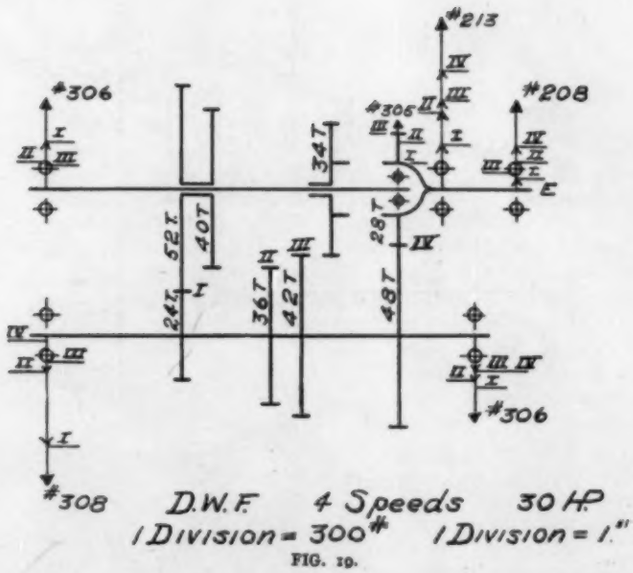



FIG. 19.

While similar records of experience may be collated for bearings of any type, whether ball, roller or plain, it must not be overlooked that this is a record of experience, and can therefore be applied, as regards sizes and all quantitive relations, only to the bearings in question, which were all either D.W.F. or H.B.

Similar records of actual experience with every form of ball or roller bearing in use have been carefully collated and the lessons drawn utilized along with these from the D.W.F. to aid my keeping up a steady advance in this highly specialized field.

The journal loads given in the various preceding examples are readily enough derived by calculation from a determination of the tooth pressure at each gear pair or torque at the gear radius required to transmit the H.P. at the speed in question, this in turn resolved into loads on the shafts at the centers of the gear faces in inverse proportion to the gear radii and these again divided between the shaft journals in inverse proportion to the distances from the journal center to the gears. Yet, a graphic determination of these factors has the advantage of simplicity of checking the intermediate steps, of proving the latter automatically, and of permitting the direct transference of the results with a pair of dividers to the journal diagrams.

In Fig. 24 one gear pair and the four journal locations of the two shafts are shown to scale. The pitch line torque L is laid off below to the desired scale; a vertical, M, corresponding to the gear radius, is laid off at one end of L upward, and the pinion radius N downward at the other end of L. A diagonal connecting the extremities of M and N will intersect L and divide it into two portions, P and Q, that give the loads at the shafts.

Taking the lever arm A of load Q to the journal, and erecting this as a perpendicular upward from the intersection of L just found, then dropping the lever arm B perpendicularly from the extremities of L, and connecting by diagonals, will

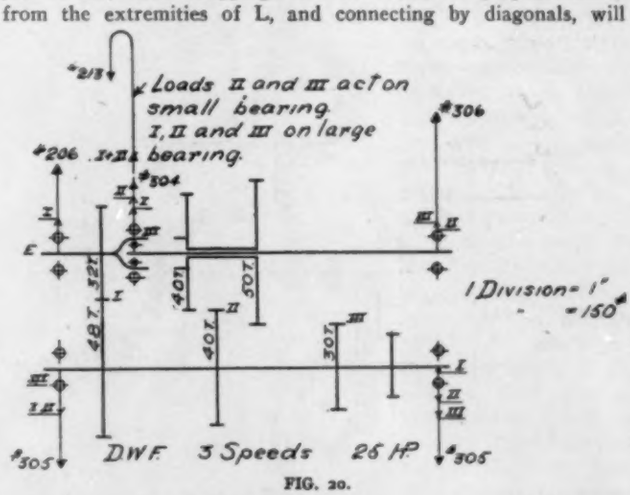



FIG. 20.

give intersections dividing load P into 1 and 2, acting on the bearings of the lower shafts and 3 and 4 acting on the bearings of the upper shafts.

If the torque L has been calculated correctly, all subsequent steps prove up, since the sum of the four loads must equal the original torque.

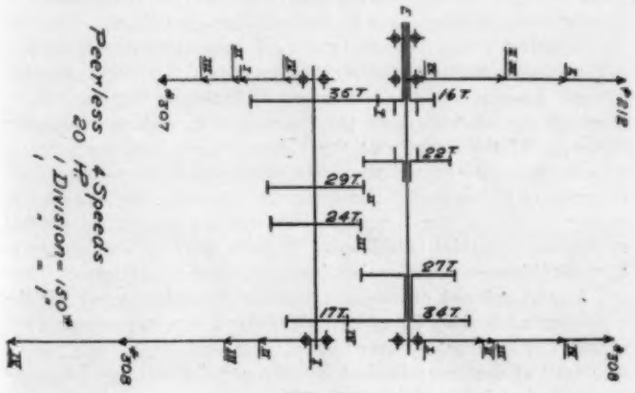



FIG. 18.

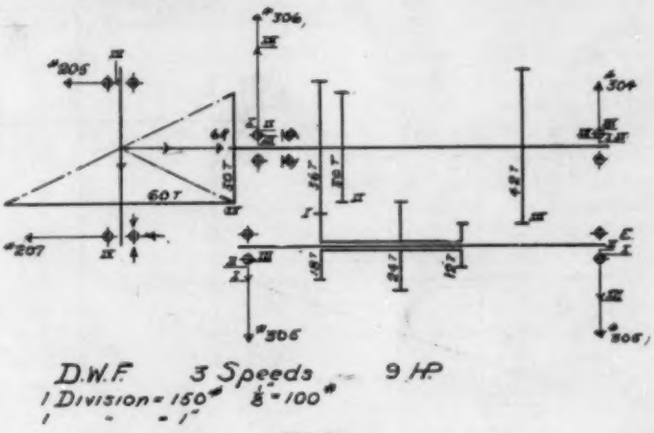



FIG. 21.

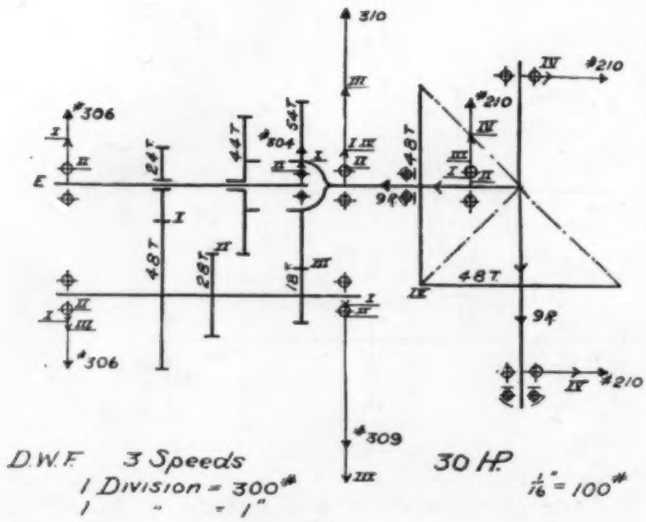



FIG. 22.

The graphic determination of radial and thrust loads is given in Fig. 25.

The calculated pitch line torque, L, is laid off to scale in a

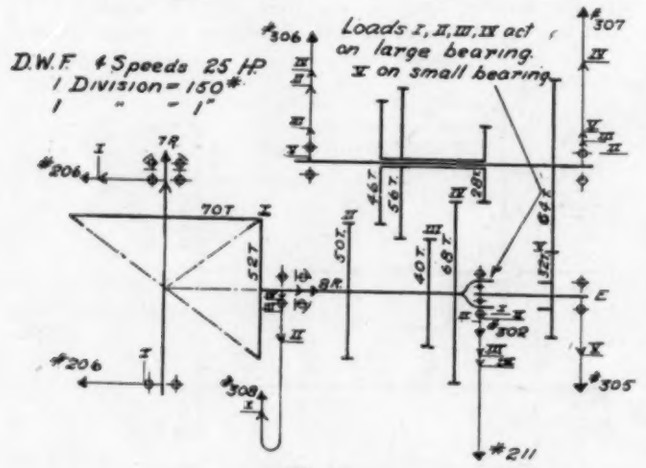



FIG. 23.

direction normal to the pitch line. Lines parallel to the shaft are laid off from the extremities of L. From their intersection a perpendicular to L is drawn. From the meeting point parallels to the shaft are drawn. The resultants 1 and 2 are respectively the radial and thrust load of the pinion, and are transferred with the dividers to the gear diagram.

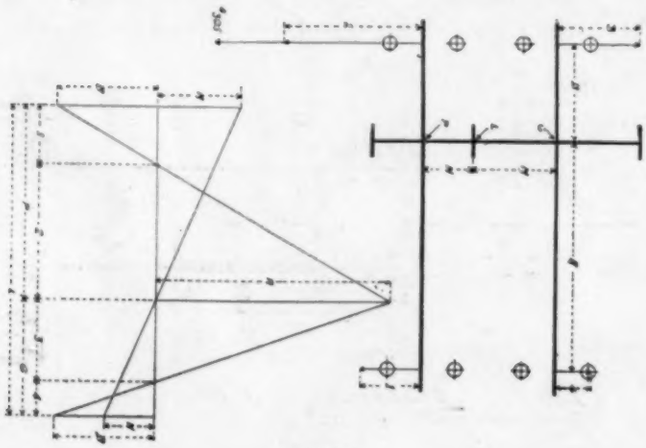


FIG. 24.

Distances 3 and 4 relate to the bevel gear respectively as thrust and radial load.

The thrust loads on the bearings are not affected by the location of the bearings along the shaft. The radial loads found act on the shafts at the point indicated by the largest pitch radii as shown. (Strictly, this is modified by the length of the gear teeth and their accuracy of contact. Theoretically, the correct point of average torque is about one-third of the tooth length inward. As all results are merely comparative,

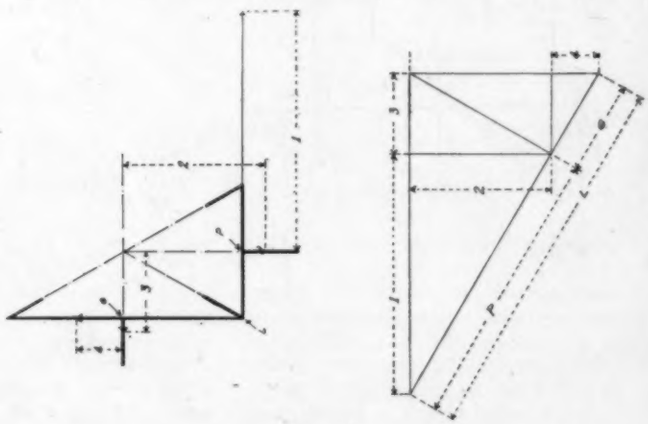


FIG. 25.

this deviation from strict truth gives greater simplicity and does not alter comparative results.)

The division of these loads into radial loads acting on the journals is graphically accomplished in the same way as explained in connection with Fig. 24.

As there are present many users of ball bearings, and they no doubt will agree with me that their several interests can best be served by the fullest possible consideration of, not only their individual experience, but of that in connection with the experience of others, I sincerely thrust that they will favor me with their observations, so that I may in future, as I have in the past, analyze and compare them and draw conclusions and make these available to all, though, of course, regarding the individual communications as confidential.

[Editor's Note.—As the drawings are not reproduced here in the original sizes, the cross sectioning has necessarily been omitted.]

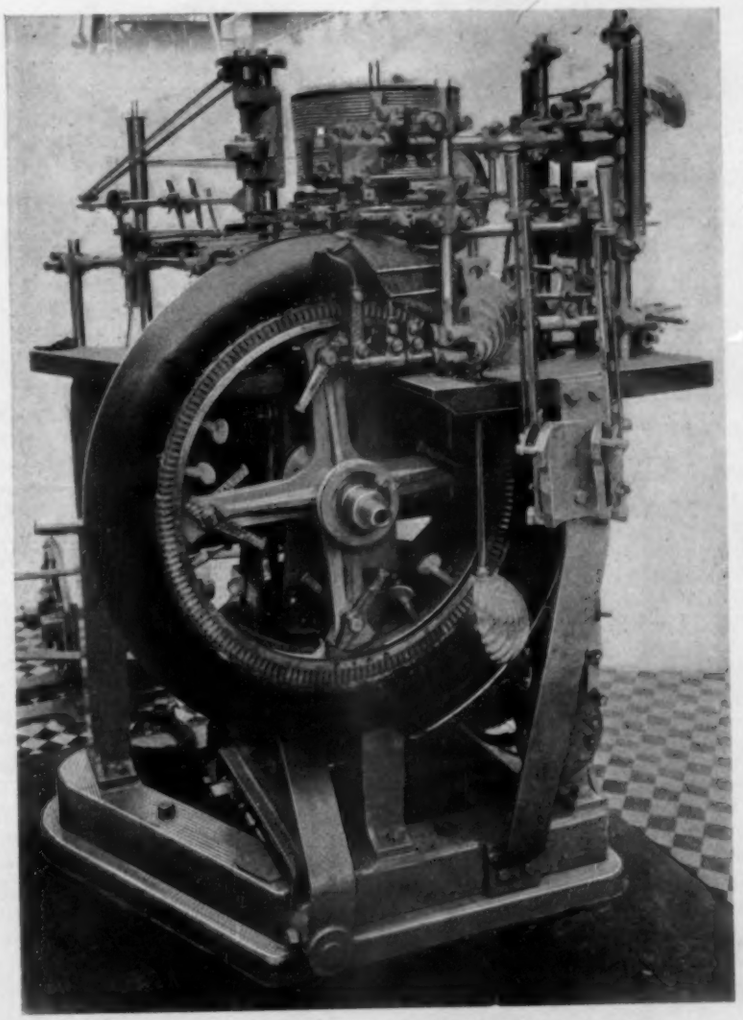
## THE ADVANCE OF THE AUTOMOBILE.

The automobile industry having passed the perils of infancy and early youth, seems to be coming fast into its rightful inheritance as a prominent factor in the commerce of the country, says *Engineering*. Almost as soon as it was born it was attacked by that most terrible disease of young mechanical invention, the microbe of which is the company-monger. We remember with some satisfaction that we did what we could to counteract this danger, but its effect was so serious that for a long time the native industry was stunted in growth, and this country had to depend chiefly on imported cars for its supply. Another infantile ailment from which the motor car suffered was due to those owners of cars who used them simply for rushing along the highways of the country at the highest speed they could reach, regardless of the comfort, convenience, and even safety of all other users of the road. Shortcomings in design that marked the earlier stages of the movement we do not regard as morbid symptoms. Nothing mechanical is born perfect, and progress towards higher efficiency is always through experience; that which is abandoned on one day forming a stepping-stone for the more perfect device of the next. The steps, however, would have been fewer had the engineer been oftener consulted in early days. The trail of the unmechanical is still over the industry, but happily it is fast being obliterated.

# SEEN IN GREAT BRITAIN'S SPRING SHOW

LONDON, April 13.—Cordingley's show, as the twelfth annual exhibition at the Agricultural Hall is generally designated, united about four hundred exhibitors, but had nevertheless quite a number of noticeably bald patches. Reo and Logan, the former with a pleasure car, the latter in the commercial vehicle section, maintained America's reputation for progressiveness. The Reo especially was a center of attraction, and the opinion was pretty generally expressed that its models would be hard to beat at the price. In a recent non-stop and flexibility run from London to Bexhill-on-Sea, a two-cylinder Reo made a very satisfactory performance, and placed itself high on the official list in a competition which distinctly favored powerful four and six-cylinder machines.

There are many here who fail to find a *raison d'etre* for the independent show in the Agricultural Hall and would fain see the two exhibits united in one at the end of the year. Novelties are not expected here, for all firms from whom anything interesting is likely to come make a point of being ready for the winter exhibits. Its date, and the fact that there are always some firms behind time, give it ground for a continuance of its career. The man who is itching to exchange a handful of bank notes for a brand new automobile rushes enthusiastically to a show which opens its doors just as the winter frost is thawing out of the roads and spring breezes are calling to an open-air life. To the manufacturer who could not finish his models in time for the Olympia or the Paris exhibits, the spring friend is a friend indeed.



PRACTICAL DEMONSTRATION OF PALMER TIRE CONSTRUCTION.

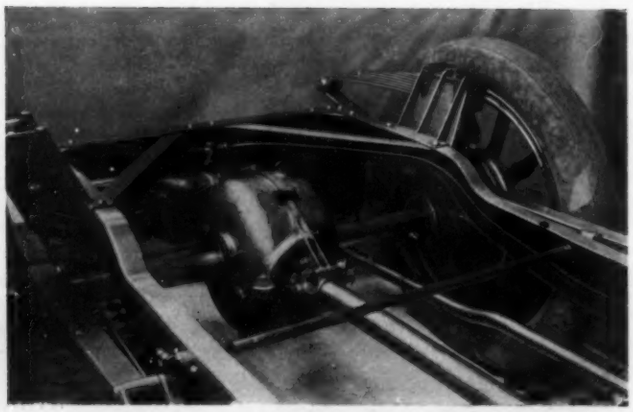
The exhibition is not representative of any one nation, for although England, France, Germany, America, Holland and Switzerland all have their representatives, not one of them shows more than a tithe of its products. The six-cylinder Spa, an Italian production, the Auto-Mixte and the Mercedes-Mixte, both gasoline petrol productions, the Nacke and the Horch are new to this country.

### Some of the Leading Mechanical Features.

Among the aristocratic class of cars the new four and six-cylinder Spa machines, fresh from the Turin factory, attracted well-deserved attention. Standard European lines of construction are followed, cylinders being cast in pairs, valves on opposite sides, and induction pipe brought to a pocket common to each pair of cylinders in order to obtain equal fuel feed. The ignition is by low-tension magneto. Drive is by propeller shaft and live axle, the torque rod and radius rods being of very substantial construction. Brakes, as is generally the case on high-grade Italian cars, are exceedingly powerful and are water-cooled and compensated. Those operated by the foot pedal are duplicated, one being on the clutch shaft and the other on the rear end of the gear shaft. Florentia, another Italian production, would enter in the same class as the machine just described. A six-cylinder chassis is exposed, with cylinders cast in pairs, valves on opposite sides, gear-driven Eiseman magneto on the induction side and pump on the exhaust side, multiple disk clutch and four speeds and reverse. A very large inspection plate is provided on the gear box, equipped with a milled-head knob, a quarter turn of which will release the plate. The feature of the machine is the excellent rear suspension by three-quarter elliptic springs, and the diagonal frame stays at rear.

Novel features are found in the Porthos 24-32-horsepower chassis, with separately cast cylinders, valves on opposite sides and high-tension magneto. In addition to the fan behind the radiator the flywheel is vaned. Lubrication by means of a plunger pump sucking oil from a box on the dashboard and delivering it through a series of sight feeds is according to general practice, but is particularly ingenious in arrangement and design. The rearmost exhaust valve tappet rod is expanded near the top, so as to form a piston, the tappet guide being also broadened into a pump casing, with simple outlet and inlet ports, to which the oil pipes are connected; oil circulation thus must commence and cease concurrently with the engine motion. The sight feed drips on the dashboard are jacketed by means of a by-pass off the water circulating pipes. There are entirely new features in the live axle. The differential shafts are split centrally in the usual manner and drive the wheels by dog clutches, but instead of the weight being carried on exterior sleeves, a solid rod completely passes from end to end through the differential and the hollow differential sleeves, and on this rod the road wheels are free to rotate. There is no exterior casing, the sleeves revolving in ball bearings suspended from three-quarter elliptic springs of ample dimensions.

Spyker, the well-known Dutch firm, has only made minor improvements to their excellent chassis. In the new model the dashboard is cleared of everything but a water gauge and a gasoline gauge, the dials of which are countersunk in the dash to



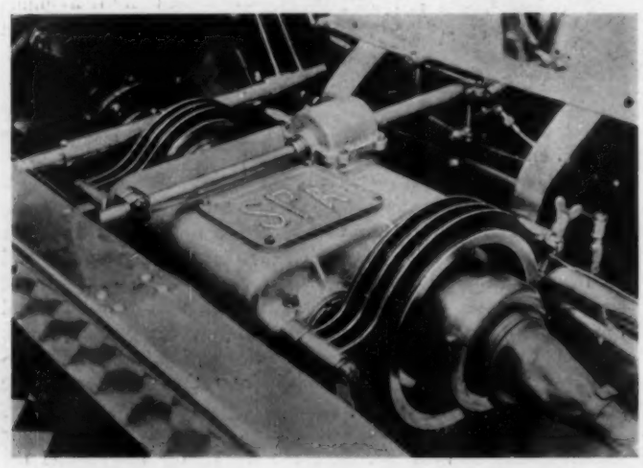
DISTINCTIVE FEATURES OF REAR OF PORTHOS CHASSIS.

protect them from injury. There is an ingenious arrangement on this car by which the leather-faced cone clutch can be disengaged with the minimum of exertion. A cross-bar level with the clutch shaft, with the end hinged to the side of the main frame, gives a very powerful leverage and enables the clutch to be withdrawn instantly by a touch of the toe.

There is a newcomer to this country in the Horch car, produced in Saxony. It has four-cylinder engine, cylinders cast in pairs; valves all on one side with overhead inlets having large bearings to the rockers. Ball bearings are employed for both camshaft and crankshaft. There is an original feature in the gasoline supply. The main tank at the rear is under pressure and feeds a small tank on the dashboard holding nearly a pint of gasoline. From this tank the fuel flows by gravity to the carbureter. The advantage is that there is always a quantity of fuel available for starting without pumping. There is a double universal joint between the clutch shaft and the gear box; the latter is of the double sliding type with an extra ball bearing on the direct drive shaft, so that no part of the divided shaft is unsupported. When the top gear is engaged the lay shaft is idle, the cardan shaft being in a casing hung in one line with the ends of the radius rod, hence the casing acts as a torque rod.

### Useful Minor Improvements Are Numerous.

Among the improvements in detail, more numerous than changes in structural parts, there is on the Adler car a concealed trigger, covered by a hinged cap in the top of the change speed lever to prevent reverse being used unintentionally. Before reverse can be put in the cover must be raised and the trigger depressed. With this arrangement it is almost impossible to put the reverse in accidentally. The brakes are water-cooled and to obtain a flow of water all that is necessary is to depress a small toe pedal pivoted to the bracket of the foot brake pedal. The distinctive features of the Horseshoe car is a radiator in the form of a horseshoe. There is nothing to be said about the engine, but the type of the radiator gives the car a distinctive feature. On the Metallurgique, a Belgian machine, there is an oil splash guard above the flywheel. On the Unic car (Georges Richard) the oil reservoir to supply the sight feeds on the dash is carried inside the bonnet, thus maintaining the oil in a fluid condition in cold weather. On the Peugeot car a drain tap is fitted in the base of the gear box.



POWERFUL WATER-COOLED BRAKES OF S. P. A. MACHINE.

Petrol-gasoline vehicles were the feature of the exhibits in the heavy section. None of them are entirely new, though the Auto-Mixte and the Mercedes gasoline-petrol chassis are sufficiently novel to attract considerable attention. The principal features of the Auto-Mixte, a Belgian production, are the use of a dynometer, an electro-magnetic clutch, a compact set of accumulators and an electrically controlled carbureter. Braking is also electric. Omnibuses are particularly prominent, for the Britisher has implicit faith in this vehicle to solve the transportation problem in great cities. There are more examples of the commercial vehicle for passenger service than for transporting goods.

### What the Accessories Section Offers.

The inventive genius gives his fancy full play on the thousand and one accessories, which, though not forming a fundamental part of the car, would leave the automobile in a very pitiable condition if they were withdrawn. A few of them were good; the majority were of doubtful utility. In the former class can unhesitatingly be placed the Ripault combination valve grinder and remover. The tool, which is of French origin, has already been described in THE AUTOMOBILE. It is a simple kind of brace which compresses the valve spring and allows the valve to be withdrawn without difficulty. For grinding valves a screwdriver blade is slipped into the brace. The same agent shows a ratchet which enables the jaws of the spanner to be set at any desired angle to reach nuts in awkward positions.

NEW TYPE VALVE CONNECTOR.

There is an excellent idea in a universal tire valve connector which has simply to be placed over the valve, requires no screwing, cannot come off when pumping, does not leak and fits any size valve. This little device was exhibited two years ago by a French mechanic in an unpretentious inventors' exhibition in Paris, but this is, we believe, the first time it has been offered to the public. It consists of a cup-shaped metal vessel surmounted by tube *D*, to which is attached the rubber tube connected with the pump. The base of the cup is closed by the piece *E*, of best quality rubber, held in position by plate *C*, fixed in place by the nut *B*. The rubber washer *F* has a hole in its center through which passes the valve. The cup-shaped terminal being placed over the valve, the rush of air presses the part *F* of the washer on the valves and prevents any leak. As is self-evident, the greater the air pressure the more firmly will the washer be pressed on the valve.

Among the speed and distance recorders is an interesting instrument shown by the Cowley Engineering Company. In addition to the ordinary speed and distance marking, there is a dial on which is recorded the speed maintained during the preceding half-mile. This serves as very useful evidence in unjust police proceedings. The record is traced by white pins, which take up their position in segmental slots in the black center dial. The apparatus is worked positively, by the usual type of linked chain.

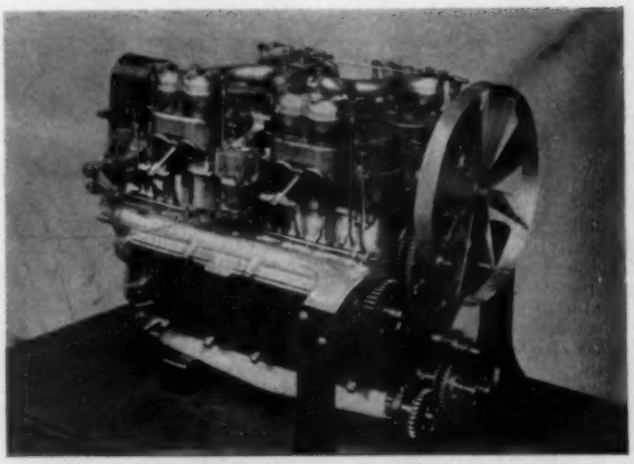
S. Smith & Sons, of speedometer fame, have a big show of their specialties, among which may be mentioned a combination compass, barometer, speedometer and clock. The barometer, speedometer and clock are in one line on a polished board and the compass is suspended in a circle above them. There is a

well-designed folding canvas bucket with handle and lip complete, shown by the French Motor Accessories Company. The Stepney spare wheel has been before the public long enough not to be classed as a novelty. An improved type is, however, shown for the first time. The spare wheel clips onto the rim and is held there securely, while leather straps round the spokes prevent creeping. The new type is adjustable to fit any size wheel. When a puncture occurs the Stepney wheel is placed in position, an operation of three or four minutes, the punctured tire is left in its place and the journey finished with the makeshift.

The popular exhibit in the accessories section is the Palmer Tire Company's new automatic machine for making Palmer cord tires. As will be seen from illustration, the tires are made of layers of rubbered cord. It is claimed that the triple grooved pattern will not skid until the tread is worn and that the tread can be remade at little cost. The distinctive feature of the Vivian non-skid tire is that it is composed of alternating sections of hard and soft rubber. Elastes occupies a rather prominent position in the exhibition, though it cannot now claim to be a novelty; it may, however, be new to home readers. Instead of an air chamber, the outer shoe envelops a roll of composition composed of gelatine, glycerine and chromate salts, made to any consistency to suit cars of various weights. The composition bears a very close resemblance to the material used for making printers' rollers. Punctures are of course impossible and there is not any noticeable alteration in the resiliency of the tire. The makers declare that it prolongs the life of the outer shoe. America's share in the accessories section is the Rushmore lamp and a number of lubricating oils shown by British agents. Rushmore, who is as well known here as over the water, had as an attraction a large naval searchlight projector, working on the same principle as the smaller automobile searchlights.

## LONDON-PARIS WEEKLY AUTO SERVICE.

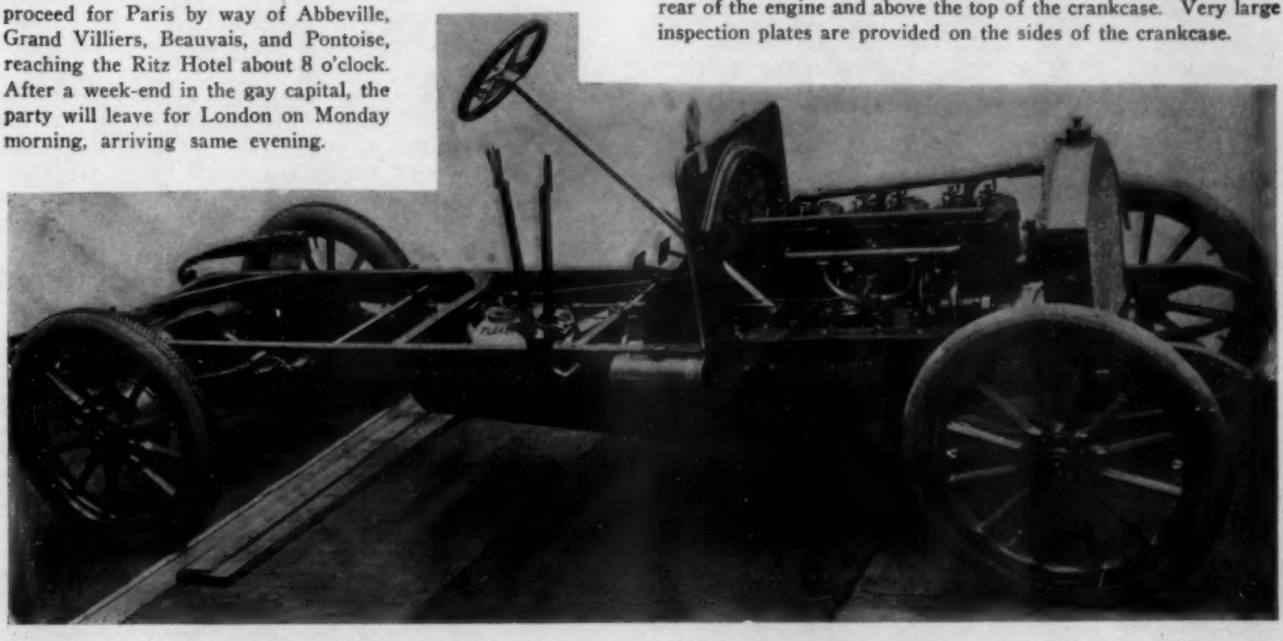
LONDON, April 13.—In a few days Londoners will be able to visit Paris in a much more agreeable manner than by the Southern British and Northern French railroad routes. Starting on May 3 there will be a regular weekly automobile service between the two capitals by means of a 50-horsepower Gobron Brillié touring car. The automobile, with five passengers on board, will start from the Carlton Hotel at 8 A. M., call at the Ritz, in Picadilly, fifteen minutes later, and proceed by way of Maidstone to Folkestone, arriving in time for the 11:30 boat, reaching Boulogne at 1:30. The machine will immediately proceed for Paris by way of Abbeville, Grand Villiers, Beauvais, and Pontoise, reaching the Ritz Hotel about 8 o'clock. After a week-end in the gay capital, the party will leave for London on Monday morning, arriving same evening.



EIGHT-CYLINDER ENGINE PRODUCED BY ALL BRITISH COMPANY.

## NOVEL BRITISH EIGHT-CYLINDER ENGINE.

LONDON, April 13.—As a mechanical novelty there was nothing in the Agricultural Hall show quite so interesting as the eight-cylinder engine built by the All British Company. The illustration given herewith furnishes a good idea of how the huge machine looks. The purpose for which it is to be used was not disclosed. It is not a stationary engine, it is too big for a car and it is far removed from the general marine type. It will be noticed that the cylinders, which are cast in pairs, are in two lines, with the crankshaft centered between them in an exceptionally deep crankcase. Instead of the usual connection with the crankshaft by means of a connecting rod, the connection on this engine is by means of rocker arms and connecting rods, as employed on the Arrol-Johnston machines. Valves are all mechanically operated, the inlet valves being in the heads, operated by rocker arms, and the exhaust valves in pockets on the sides. The throttle control is a distinct departure from standard practice. It consists of a system of cams by which the driver is able to entirely cut out of operation one, two or more cylinders, according as he desires to reduce power, the remaining cylinders always working with a full charge and constant compression, and therefore under the most favorable conditions for economy. Ignition is by high-tension magneto mounted on a bracket to the rear of the engine and above the top of the crankcase. Very large inspection plates are provided on the sides of the crankcase.



SIX-CYLINDER FLORENTIA CHASSIS, ONE OF THE ITALIAN MASTERPIECES AT THE LONDON SHOW.

# LETTERS INTERESTING AND INSTRUCTIVE

## Regarding Intake Leads and Their Equalization.

Editor THE AUTOMOBILE:

[715.]—I am designing a six-cylinder automobile engine, and find myself at a loss in reference to the arrangement of the intake piping. I want to get the distance from each cylinder to the carbureter as nearly equal as possible, so that all of the cylinders will develop the same power. I also want the leads to be as short as possible, so that there will not be any considerable volumes of mixture between the carbureter and the cylinders, to attenuate when the engine is speeded. Is it possible so to equalize the intakes of a six-cylinder engine that they will feed the cylinders as evenly as can be done with a four or eight-cylinder engine? What do you think of the advisability of using more than one carbureter on an engine of the sort I have in mind? A. R. W.

Pontiac, Mich.

If you mean that you require an intake piping of perfectly symmetrical form, such as the single, double and triple Y's used for four and eight-cylinder engines, we can say at once that nothing of the sort is possible. Very good approximations are secured, however, in feeding the fuel to most six-cylinder engines by arrangements that compensate for differences in distance and directness of fuel flow. You will find many interesting examples among the best modern six-cylinder machines, which it will repay you to study. The distance from a carbureter to the cylinder or cylinders at feeds always should be as short as possible, because of the effect you mention. But it is, of course, impossible to secure very remarkable results in this respect with a six-cylinder engine fed by a single carbureter, and it probably is a fact that few multi-cylinder engines develop the same power in each cylinder. The use of a plurality of carbureters, though it has been suggested by at least one exceedingly prominent European designer and builder of cars, is open to the objection that it is practically impossible to adjust even two similar carbureters alike, so the unequal feeding of different cylinders by no means is done away with by this scheme.

## The Position of the Spark Plug.

Editor THE AUTOMOBILE:

[716.]—If it is not too much of a demand upon your space, I wish you would let me know through your columns what is considered the best point in the cylinder for the spark plug. That is, should it be located exactly in the center of the combustion space, or is it all right to have it to one side, as is the case in so many cars? Is it really an important advantage to ignite the charge in the middle, so as to get it consumed in the quickest time possible?

Milltown, N. J. ARTHUR BEVERIDGE.

A very little study of modern automobiles will convince you that there is no agreement, among those best qualified to judge, as to the best position for the spark plugs. Some makers place them in the centers of the cylinder heads, others place them over the inlet valves, others still place them in the sides of the cylinders, and a few prefer to locate them by the exhaust valves. It is on purely theoretical grounds that the center of the combustion space is held to be the correct location for the ignition to start from. Practically, no such great advantages as this argument assumes are shown to exist, since the rate of flame propagation in an explosive mixture of the sort used in an automobile is in the neighborhood of 3,500 feet a *second* against a piston speed of not over 1,500 feet a *minute*. The result is that no matter where ignition is commenced, the combustion is sure to be accomplished quickly enough for any practical purpose. You will find that most automobile designers who place the spark plug in the center of the cylinder head do it primarily for other reasons than the one you seem to regard as most important. For instance, the reason usually given for placing the plug over the inlet valve is that, in this case, when the spark occurs, it is more likely to be in fresh mixture than if at some other point, where retained exhaust gases might be pocketed. The argument for the exhaust valve placing is the scouring action of the hot gases.

## A Query Concerning the Proper Mixture.

Editor THE AUTOMOBILE:

[717.]—Under the head of Letters Interesting and Instructive, will you kindly let me know about the following?

On a two-cylinder, 20-horsepower car I occasionally shut off the gasoline supply at the tank, when in the barn after a run, and allow the motor to run until the carbureter empties itself with the motor running. I notice that just before the supply is exhausted the engine speeds up very materially, increasing its revolutions per minute considerably, although the spark advance lever remains at the same position—the effect is the same as if the spark were greatly advanced. Does this indicate that I am using too rich a mixture while on the road?

(2) Theoretically, should a richer or thinner mixture be used in hot weather as compared with cold weather, assuming the humidity to be the same?

(3) Does the theoretical answer to the last question hold good in actual use and practice? MIXTURE.

Walden, N. Y.

As you surmise, this action of the engine would undoubtedly seem to be due to the better-proportioned mixture created when the fuel is just about to give out. Your running the motor in this fashion, *i.e.*, allowing it to empty the carbureter after the gasoline supply has been cut off, also serves to disprove some of the many fallacies regarding the necessity of minute adjustment of the gasoline level in the float chamber. We should say that this action did indicate the fact that you were using too much gasoline under ordinary circumstances, but when running on the last drops of fuel in this manner the engine will at a certain point be receiving a theoretically perfect mixture, which will be difficult to more than approximate by carbureter adjustment. Further, the engine will continue to run for a short time on a mixture far too weak for starting or ordinary running, as it is running light and everything is hot—conditions conducive to the use of a very weak mixture, so that it will not pay to attempt to get the carbureter adjustment too fine.

(2) As it is possible to run the engine on a far weaker mixture than is ordinarily available, when everything is hot, and as the engine naturally tends to run hotter during warm weather, we should say that the use of a weaker mixture in summer was in conformity with theory in this regard.

(3) In a certain sense, it does. That is, with stationary engines like the Deutz and the Diesel, using an extremely high compression the weakest possible mixtures are used, demonstrating that the high temperature will satisfactorily burn a mixture that otherwise would not ignite. These engines are about the most economical in fuel consumption that have ever been built. Concerning the automobile alone, however, we doubt if many autoists find that a distinctly different carbureter adjustment is needed in warm weather as compared with cold. On the other hand, it is a matter of common knowledge that the average driver runs his car on a mixture that is more or less too rich in gasoline, and frequently very much too rich. The latitude of adjustment under which the engine will function satisfactorily is accountable for this.

## Distribution of Water in Radiators.

Editor THE AUTOMOBILE:

[718.]—I have a water-cooled car, built two years ago, which is causing me considerable trouble by overheating when the weather is the least bit warm. I have examined all of the usual causes of such a difficulty, but the only thing I can find wrong is the radiator, which becomes hot at the center, while remaining cool at the sides, whenever the motor is run for a while. The radiator is of the vertical wavy-tube type, resembling a honeycomb in its general appearance. I do not know whether it used to vary in temperature as it does now because I never examined it before for any similar trouble, but I do know definitely that something is wrong, for with exactly the same fittings and under similar conditions the car used to run all right. Should there not be some sort of baffle plates in the top of the radiator, to distribute the in-

flowing water in such a way that it will not run right down the nearest tubes? I have an idea that there once were such baffle plates, but that they may have been corroded out or through by an anti-freezing solution I used last winter. I do not think that the radiator tubing is obstructed, because the flow of water through the cooling system seems quite unimpeded, which I imagine would not be the case were there deposits clogging the tubes.

St. Louis, Mo. DR. LEONARD DECKER.

It looks as though at least part of your troubles were due to some obstruction in the tubing, whether there are damaged baffle plates or not. It is not disproof of this that the water seems to flow freely, for the water space in a radiator of the type you describe is much greater than the cross-section of the piping used in the cooling system. In some early cars not enough attention was paid to the distribution of the water into the radiator, and it is possible that the design of your car may need some correction in this particular. The water should enter, of course, at the top of the radiator, so that it will flow down as it cools. From the main intake there should be separate internal channels to divide the stream and conduct its parts each to a particular group of the cooling tubes. If all this is lacking it will hardly be possible to supply it except by sending the radiator to the manufacturer for the required alterations, for assembling and soldering a radiator is an exceedingly difficult job, scarcely to be tackled except by an expert. To remove any corrosion that may be present, fill the radiator with a caustic-potash solution or a ten-per-cent. solution of sulphuric acid in water. Both of these are powerfully corrosive, so must be handled with caution and not left in the radiator too long. After draining them out repeated rinsings with clean water should follow.

### How to Charge Accumulators from Gravity Cells.

Editor THE AUTOMOBILE:

[719.]—Can you or your readers give me any data or directions in regard to charging a six-volt storage battery from gravity cells such as are used in telegraph work? I understand this is done in Europe, but have not heard of its being used in this country. Any information you can give me will be greatly appreciated. W. J. C.

Aqueduct, N. Y.

Charging accumulators by means of gravity cells can be done without any difficulty, but is a rather slow and somewhat expensive process. The gravity cell only has an output of .4 to .5 ampere at .9 to 1 volt potential. As your six-volt set of accumulators is probably either of 40 or 60 ampere hour capacity, it will be readily apparent that quite a few cells of gravity battery will be required if the charge is to proceed at a reasonable rate. While under charge and approaching saturation the storage cell reaches a voltage of 2.5 or slightly over, so that in order to be on the safe side at least 10 cells of gravity battery would have to be connected in series. The current available would then be .5 ampere at approximately 10 volts; if your accumulator is of 40 ampere capacity it would require 80 hours or more to charge it, and if of 60 ampere hour capacity 120 hours or over—in other words, the better part of a week in the latter case. The time can be shortened by providing another set of ten gravity cells connected in series and the two sets connected in multiple, the available output then being one ampere at ten volts, which would cut the length of time required for charging approximately in half.

The cells should be of the 6 by 8-inch size and they must be placed on a solid foundation where they will not be subject to even slight disturbance, as this will interfere with their working. Unfold the copper strips in star shape, place in the jars and cover with about three inches of water, then pour in three to four pounds of sulphate of copper (bluestone); hang the zinc from the edge of the jar and fill with water to within an inch of the top. To render the cells active without delay, five ounces of sulphate of zinc should be added to each and the whole battery placed on short circuit—*i. e.*, connect copper terminal of one end cell to zinc of opposite end; a teaspoonful of sulphuric acid per cell may be employed in place of the sulphate of zinc. As soon as the cell is working satisfactorily the separating point of the two solutions will be clearly defined, the upper being colorless and the lower a deep blue. At least twenty-four hours on short circuit will be required before the cells give their normal output; the cells should never be disturbed. To keep the cells up to maximum efficiency they should be tested with a hydrometer every week or two; the upper solution should allow the instrument to sink to 25; if heavier, draw some off and add clear water until this point is reached. If the zinc becomes badly coated it must be lifted out and scraped and washed; fresh bluestone should be added as needed by dropping in carefully a little at a time. Trouble arising from evaporation, dust and creeping of the salts may be prevented by pouring about half an inch of heavy paraffine oil on the top of each cell.

### Remedying One Evil Apt to Bring On Another.

Editor THE AUTOMOBILE:

[720.]—I note in your issue of April 4, letter No. 651, in which Mr. MacArthur suggests a method for preventing carbonizing of a motor. Doubtless Mr. MacArthur's method will prevent carbonization, but I think there is a great drawback to this method. If you should raise a cylinder one-quarter inch as is suggested, it would greatly decrease the compression of the motor. For example, take a motor with a bore and stroke of four inches. Take the compression space as 30 per cent. of the volume displaced by the piston, which will be 15.08 cubic inches. Now, if the cylinder is raised one-quarter inch it will increase the compression space 3.14 cubic inches. Adding this to the former compression space we have a total of 18.22 cubic inches. Assuming the compression to be about 66 pounds for 15.08 cubic inches, it will decrease proportionately for 18.22 cubic inches. Therefore,

18.22:15.08::66:55.

Then, the difference between 66 (the compression at first) and 55 (the compression after raising the cylinder one-quarter inch) is 11 pounds, which I should think would cause considerable loss of power.

I think if anyone were to try this method it would be advisable to fasten a metal plate, equal in volume to that gained by raising the cylinder, to the cylinder head. HOWARD EDDY.

Hartford, Conn.

We presume the evident intention of our correspondent, Mr. MacArthur, was mainly to point out to the designer the error of his ways in this respect, and to recommend that the engine be so constructed that the piston should not rise into the counterbored space in the combustion chamber, which, of course, would be the best preventive. That the expedient of raising the cylinders of an engine already in use, which he suggested as a cure, will result in the evil you speak of, goes without saying. Of course, it can be overcome by the insertion of a metal plate in the head, of a thickness equivalent to the difference caused by the elevation from the crank-case, but it strikes us that this is an extremely laborious method of beating the devil round the bush, merely to overcome what ought to be preventible by far simpler and less expensive means. With the proper quantity and quality of lubricating oil and the proper fuel mixture, it certainly should not be necessary to dismantle an engine more than once a season—and that at the end, on this account. The fact that there are thousands of gasoline engines of the stationary type that run 10 to 12 hours a day and six days a week, most of the time under full load, without suffering from this cause, shows that the average autoist still has a great deal to learn on this score.

### Some Queries Regarding Proper Lubrication.

Editor THE AUTOMOBILE:

[721.]—Please answer these questions in the columns of your valuable paper: (1) What is the best method of determining the proper amount of cylinder oil to feed cylinders of two-cylinder-opposed motor? (2) Am at present using light Monogram. Under the same conditions, should I feed more light oil than medium? (3) Should I feed less oil to rear cylinder than front, and why?

Kingston, N. Y. JAY TERRY.

It is difficult to lay down a general rule for determining the amount of oil to be fed to a motor when the only data given is that it is of the two-cylinder opposed type. The power and speed at which it runs are both important, as well as the manner of cooling, air-cooled motors requiring more oil of a higher fire test

than water-cooled motors. It is customary for manufacturers to state in their instructions accompanying the car, just how many drops per minute should be fed from the different cups. Failing this, they should be adjusted to deliver just sufficient to keep the various parts of the motor well-lubricated; in the case of the connecting rods and pistons, this may be determined by setting them at a certain point—10 to 15 drops per minute should come near the correct quantity in your case, as the double-opposed type of motor usually runs at a comparatively low speed, and noting the effect. Should this quantity prove excessive, the result will soon be noticeable at the exhaust, as the surplus will burn in the cylinders and produce a bad deposit of carbon unless corrected. In order to determine whether it is sufficient or not, clean out the crank-case, fill with fresh oil to proper level, which should be just so that big-ends dip in it about half an inch on the lower part of their sweep, set the feed as already mentioned, and at the end of two or three hours running—not long enough to endanger the motor should the feed be insufficient—inspect the crank-case interior again and note whether the amount has unduly diminished or increased. In this way, it should not be difficult to ascertain just how much oil is required to keep the interior of the motor properly lubricated. In the case of outboard bearings, the condition in which they run will be indicative of their lack or excess of oil; the makers usually provide oil or grease cups of a capacity calculated to last each particular bearing a certain length of time, and if they are kept filled, there is little to fear from hot bearings.

2.—The amount of oil necessary will naturally differ with the quality, but if the light oil you speak of is better adapted to the purpose than what you were previously using, it will probably require less rather than more of it.

3.—We cannot conceive of any reason why the rear cylinder should receive less oil than the front, unless the engine does not happen to be levelled on the chassis and the oil tends to flow toward the rear cylinder at all times. Under normal conditions, both cylinders should receive the same amount of oil.

### How Some Cars Dispense with the Differential.

Editor THE AUTOMOBILE:

[722.]—Will you kindly enlighten me as to the following through the columns of your valuable magazine:

In your April 11 issue I read an article regarding this year's Grand Prix to be run in France next summer, and I notice that the Darracq and Renault racing cars are being built without differential. Will you kindly state how this can be possible.

New York. DAVID F. LADIN.

The three Darracqs, the three Renaults and the Christie racer in the French Grand Prix are without differential. The American machine with its front drive is, of course, in a class by itself, but the two other makers follow established custom excepting that they have cut out the differential. Drive in each case is by propeller shaft and bevel gears to one-piece rear axle; the only difference between the racers and the touring cars of these makers is that the axle is undivided by a differential. A saving of weight is obtained by suppressing this organ, but the chief advantage, the makers declare, is that the rear wheels hold to the road better. The Renault racer with which Szisz won the Grand Prix last year and the Darracq machine with which Wagner captured the Vanderbilt Cup were both minus a differential.

### EXPLAINING THE ACETYLENE MYSTERY.

Editor THE AUTOMOBILE:

[723.]—In your "Letters Interesting and Instructive" department, in the issue of "The Automobile" of March 14 last, I particularly note letter from B. A. Birtiss (Number 636), descriptive of his experience with explosions in copper tubes connecting acetylene with lamps.

I beg leave to suggest that copper acetylide is a very dangerous and highly explosive fulminate formed by the combination of the acetylide of copper and oxide, the explosion being due to the effect of bending the pipe the same as would be the case in the presence of dynamite. I should also beg leave to suggest that an article by some chemist familiar with this matter would be a most excellent one for publication in "The Automobile."

As the formation of copper acetylide and subsequent dangerous explosions thereof are an ever-present possibility with acetylene generators, conducting pipes and lamps as now used on automobiles, possibly the makers of acetylene gas generators may be able to offer some suggestions as to the prevention of difficulties of this kind. L. P. LOWE.

San Francisco, Cal.

### ADVANTAGES OF MAGNETIC GASOLINE GAUGES.

Editor THE AUTOMOBILE:

[724.]—An article in the "Horseless Age," under date of April 10, under the heading "A Suggestion for Maintaining a Reserve Supply of Gasoline," while instructive to novices in automobiling and motor boating, is hardly up to the time, and puts one in mind of the dog barking up the tree after the coon has left.

There was a time, but in the dim past, when articles advising as to the particular class of wood and shape of stick to be selected for measuring gasoline in a tank, and articles advising motorists to carry along an extra jug which, while never taking up any room always managed to be in the way and constituted an eye-sore, and also suggestions as to reserve tanks, may have constituted interesting reading. If the writer may make a suggestion, it would be that many wise people have learned that the installment on the tank of a magnetic gauge such as the Triumph, used by Pierce-Arrow, Matheson, Knox, Stearns, Northern, L. S. Ross, Marmon, Moline, and other high class cars, and by the S. F. Bowser Company on their gasoline storage outfits, represents the advanced line in taking care, in a practical way, of the gasoline supply. The stick which many use invariably introduces dirt in the gasoline, and the evaporation of the gasoline from the stick frequently requires a chaser to find the gasoline mark on the stick. So, too, the reserve tank may be compared to an old-fashioned engineer who suggested a device to operate a whistle that the brakemen might apply the brakes and stop the train, thereby notifying the engineer that water was actually needed in the locomotive boiler, and in this case the stop would be made irrespective of the location of the water supply. An Eastern man might consider the stopping scheme suitable for the B. & A. road, but a modern engineer prefers a reliable gauge, a glance at which will show the water conditions long prior to an emergency, and not necessitate a stop.

If a gauge is necessary on a locomotive boiler, certainly a reliable tank gauge is a practical necessity on the gasoline tank of an automobile, not only for the comfort and convenience of the user of the car, but because a glance at the head of the gauge will render it unnecessary to stop the car when in doubt as to the quantity of gasoline to complete a run. It appears to the writer from his own experience, that too much cannot be said in favor of the installment on every gasoline tank of a reliable magnetic gauge, and further, the use of such a gauge results in lessening the amount of money paid for gasoline when touring, as it acts as a faithful bookkeeper. C. E. C.

Boston, Mass.

### FROM THE BRASIER REPRESENTATIVE.

Editor THE AUTOMOBILE:

[725.]—A clipping has been sent to me, by the Brasier firm, which appeared in your paper March 21, page 532, under the head of "Gustave Chedru Joins Thomas Company." Mr. Brasier states that the information which you have in this article is wholly and absolutely incorrect, in so far as Mr. Chedru's connection with the firm is concerned. Mr. Brasier states that Mr. Chedru at no time was chief engineer, and at no time was chief designer, or at no time held any principal place in the Brasier factory; and he further states that Mr. Chedru never designed or had any principal part in the design of any Brasier racing machines.

Mr. Brasier further states that Mr. Chedru stayed with the Clement-Bayard people for three weeks, and this was his total connection with that firm. That as to his being chief engineer in the Brasier firm, his position was simply that of draftsman, and that his work comprised nothing further than the carrying out of explicit instructions.

I would be very glad, in view of the above, if you would give sufficient prominence to Mr. Brasier's statement herein contained, as it is wholly unfair and unjustifiable that this man should be sailing on the laurels of the Brasier firm and be credited for work which he has never done.

It is all very well to damn the French car, and state how fine the American car is, and there is no question that a good many of the American cars are really good, but it is absolutely wrong, in my estimation, to steal any man's thunder and to take one of the best machines in the world and try to build up the reputation of an American machine on the already made reputation of a high-class foreign car. I kept still during the last campaign of free advertising on the Brasier reputation, but I do not propose, at the present time, to keep quiet any longer. E. B. GALLAHER.

New York City.

## DOING AWAY WITH THE DUST NUISANCE.

Any preparation which will remove the dust nuisance will be heartily welcomed by the automobilist. But to be generally adopted such preparation must be cheap, easily applied, lasting, have no injurious effects on tires, nor be harmful to the eyes. Rather more than a year ago a coal tar preparation known as Tarvia was introduced to the public and has since been used on more than 800,000 square yards of road with very satisfactory results. The roads were located in thirty different cities in various parts of the country and some of the work was done in Jackson, Tenn., under government supervision.

Tarvia is a coal tar preparation which can be applied to the surface of a macadam road in such a way as to unite the top dressing into a waterproof bonded surface which will not disintegrate into dust. The method of treatment is as follows:

First, the road to be treated should be a well built, firmly bonded macadam in fairly smooth condition. If the road to be treated is a new one, it should be built in the usual manner, and, after the road is puddled, sufficient screenings spread over the surface to protect it against raveling by the traffic; allow the traffic to use for two to six weeks or until the road is thoroughly dried out, when the screenings which are not bonded should be removed, leaving exposed the inch or inch and a half stone which forms the wearing surface.

If it is an old road which is being treated, all screenings, dirt, etc., which are over the inch or inch and a half stone, whichever is used for the wearing surface, shall be removed, either by sweeping, or by scraping if the screenings are caked. Many roads are maintained by keeping from 1-2 to 1 1-2 inches of screenings which have passed a quarter or half-inch mesh caked on the surface by continually wetting and rolling, and it is absolutely necessary that these should be removed in order to make a satisfactory job. If they are not removed, the result is that as soon as these screenings are dry the adhesion is destroyed and the screenings become entirely loose, thus breaking the entire tarviated surface; consequntly they must be removed, even if necessary to scrape. After the macadam is thoroughly cleaned and perfectly dry, it is coated evenly with Tarvia heated to a temperature of from 160 to 180 degrees Fahrenheit, using from 1-3 to 1-2 gallon per square yard. Various methods of heating have been used, namely, tank wagons holding from 500 to 600 gallons, with fire boxes, roofing kettles mounted on wheels, and in many places the work has been convenient to the factories, so that the preparation is delivered hot direct from the factory and no heating is required.

Sprinklers for distributing from the tank wagons, made with pipes with slots and small holes, have been used in the hopes of doing away with the sweeping, but so far nothing of the kind has given sufficiently even distribution. The most satisfactory method has been to use a hose attached to either the tank wagon or the roofing kettle, allowing the Tarvia to flow from the open end onto the road, and sweeping with street sweepers' fiber brooms.

After the Tarvia has been allowed to penetrate the road for from two to twelve hours, it is covered with an even layer of crushed stone screenings, which have passed a quarter or three-eighths inch mesh, with not more than 50 per cent. fine material. The entire surface is then rolled, with steam roller if possible, and if there are any black spots showing through the screenings behind the roller additional screenings should be applied, and again rolled until the black spots do not show after the rolling. After a period of from two to six weeks, depending somewhat on conditions, the loose dust and screenings which have not been bonded can be removed, leaving the surface perfectly smooth and clean. The first application of Tarvia generally makes the road dustless for about a year. Applications thereafter are necessary every two years, less and less of the preparation being used.

## THE TURRET LATHE FOR CYLINDER BORING.

Several interesting features of the latest methods in use for boring cylinders for automobile engines were brought out in a chat with one of the best-known builders of boring mills, says I. B. Rich, in *The American Machinist*. Feature No. 1 was that while many boring mills were still used for this work, the tendency was to get away from them to something that would give good results and faster time. So the boring mill is to some extent giving way to the large turret for this work. The cylinders are roughed out with an ordinary boring bar having a flat cutter keyed through its center. This bar is held rigidly in the turret and supported at the outer end where possible. This rough bores in very quick time. Then the cylinders are laid aside for a day or so to allow the internal strains of the castings to relieve their pent-up emotions before being finished in the same machine. The finishing cut is taken with a two-bladed boring bar, which is adjustable for size, but in this cut the bar "floats," being connected through a flexible joint. This produces a good cylinder. It emphasizes two principles. One is the best work of this kind cannot be done at one setting, but that the iron must have time to adjust itself before the finishing cut. The other is that for the finishing cut the boring bar must not be rigid.

A STRETCH OF PICTURESQUE ROADWAY ON THE MONTGOMERY TURNPIKE AT ROSEMONT, PA., RECENTLY TREATED WITH TARVIA.

# THE COST OF AUTOMOBILE RACING

OWING to the widely differing nature of the regulations governing the important European road races this year, automobile manufacturers are called upon to spend a larger amount of money on racing than before. Competitions are in a transition stage. Three years ago the 1,000 kilos weight limit was applied to the Gordon Bennett, the Ardennes race, the Brescia circuit, and the Vanderbilt contest. When the Gordon Bennett cup was sent to the museum new racing rules were spoken of, and last year the French club broke away from old conditions when it announced that its 1907 race would be held on a limited fuel allowance. Other clubs dropped their orthodoxy with the result that now not a single race in Europe is being run on the old regulation limiting weight to 1,000 kilograms. For the Grand Prix a gasoline allowance of about one gallon per ten miles is allowed; the Ardennes circuit limits the cylinder area and fixes a minimum weight; the German Emperor's cup is run under the same regulations as its Belgian companion; and for the Targa Florio there is a limited bore and stroke together with a minimum weight. The Brescia circuit, which is to be revived this year, will probably adopt the same regulation as the Ardennes and German Emperor's cup. The Vanderbilt race still remains in a doubtful state so far as governing regulations are concerned. Probably in a year or two international committees will have mutually agreed on the ideal type of rules for road races, and a car built for one race will be eligible for all other big contests throughout the world.

This year manufacturers are obliged to build three different types of racing machines to suit the different regulations. Several French firms making a point of being in every speed contest, have built one set of machines for the Grand Prix, another for the German Emperor's cup, and a third for the Targa Florio. Thus their already high racing expenditure is now trebled. It is interesting to inquire how much is spent in this fascinating but costly struggle. Paul Meyan, who has closely studied this question, gives $102,400 as the total racing expenditure for any firm taking part in the six most important road races of the year: Targa Florio, German Emperor's cup, Grand Prix, Ardennes Circuit, Brescia Circuit and Vanderbilt cup.

There are three distinct regulations, therefore three separate types of machines must be built, nine in all. Designing may be put down at $600; models would cost about $1,000; for raw material, iron, steel, aluminum, etc., $9,000 must be calculated. To turn all this raw material into finished parts expensive machine tools and skilled workmen are required, the cost of which cannot be calculated at less than $2,000. Finally all the parts are ready and assembling begins. This would occupy about 3,000 hours' work, worth $600 on the French scale. The three racers completely finished, they are sent on the road to undergo a 1,000 miles test, enter the factory again, are dismounted, modified, re-assembled, and finally tested. This work cannot be valued at less than $1,800. To recapitulate, the factory expenses are:

| | |
|---|---|
| Designing | $ 600 |
| Models | 1,000 |
| Castings and raw material | 9,000 |
| Machining | 2,000 |
| Assembling | 600 |
| Testing | 1,800 |
| First total | $15,000 |

As there are three different types of cars to build for 1907 this total must be tripled, giving $45,000.

Engagement fees for the Targa Florio, German Emperor's cup, Grand Prix, Ardennes Circuit, Brescia, and Vanderbilt cup, supposing the maximum number of cars are entered for each contest, would call for an expenditure of $9,400. Drivers, machines, attendant workmen and stores must be sent to Sicily, Germany, France, Belgium, Italy and America. These expenses cannot be calculated at less than $3,000 per race, making $18,000 for the six world's races. Insurance of drivers and material may be estimated at $200 per car and per race. As there are eighteen racers the total would be $3,600.

Nothing must be left to chance, consequently all necessary material, gasoline, oil, tires, etc., are transported to the scene of each race at a cost of $2,400, or $14,400 for the six races. Adding the items together, we get:

| | |
|---|---|
| Engagement fees | $ 9,400 |
| Traveling expenses | 18,000 |
| Insurance | 3,600 |
| Material and stores | 14,400 |
| Second total | $45,400 |

Participation in a big race involves more or less advertising; the amount varies considerably according to the value laid upon this item by the interested parties, but $12,000 is only a very modest estimate.

The total expenditure for the racing season thus evolves itself as follows:

| | |
|---|---|
| 1. Constructing machines | $45,000 |
| 2. Racing | 45,400 |
| 3. Advertising | 12,000 |
| Total | $102,400 |

These figures are based on the assumption that the firm will enter in all the six important races to be held in Europe and America this year. In reality only three French firms have made arrangements for such an elaborate program. There will, however, be ten firms in Europe which will incur an expenditure of sixty to seventy thousand dollars this year for racing alone. The amount is higher than it need be owing to the disagreement on racing conditions, but it is a very small amount compared with the volume of business done by the world's important factories. The leaders of the industry, in Europe at any rate, are convinced that the lessons learned in automobile construction as the result of the fierce struggle, and the advertising value of the races, are well worth the expenditure which they involve.

## AERIAL TRAVEL IS ALSO COSTLY.

PARIS, April 13.—There does not appear to be much that is of great value in the huge, lightly constructed, canvas covered frames which scutter about on the Bagatelle polo ground in the early morning or as shades of evening are falling, like huge birds deprived of their natural powers of flight. There is only a light frame, generally of bamboo, with a covering of parchment, linen or thin wood, a mass of wire stays, a gas engine and a propeller. Yet this simple looking machine will have cost its ambitious owner not far short of $4,000. The big frame cost about $1,000 to design and construct; the propeller is worth $160; the motor cannot be valued at less than $1,600. Wheels, transmission gear, accessories, repairs and wages of attendants will round up the sum. Santos-Dumont is constructing his sixteenth machine and half a dozen more aeroplanists have built more than four each. An estimate of the amount spent by these leading figures in the world of flight can thus be easily arrived at.

Dirigible balloons are much more costly and quite out of the reach of the ordinary mortal. The *Petrie*, which the Lebaudy Brothers sold to the French Government, is valued at $70,000. Two other steerable balloons of the same style have been ordered at $52,000 each. The steerable balloon with which Walter Wellman hopes to reach the North Pole cost a paltry $28,000.

THERE'S no diminution in the cry for smart clothes for use in automobiling. With enthusiasm affecting a growing army of autoists, makers of apparel have accomplished some wonderful achievements in the way of appropriate and fashionable toggery. There was a time, and not so very long ago, that automobile clothes were considered a luxury, but now all this is changed, and as stunning an outfit as one might wish can be owned at small cost. For example, a fashionably cut coat of imported worsted, rendered rainproof by a chemical process, is now being sold for $20 instead of $33, as was the case two years ago. Makers of automobile clothes have succeeded in providing more desirable garments than ever before for the discriminating feminine automobilist, and with models fashioned from the latest ideas of the best European designers to aid them, American dealers are enabled to offer equally as smart fashions as one sees on the Continent and at wonderfully attractive prices.

WHITE MOHAIR, LEATHER TRIMMED.
Courtesy of the Auto Supply Company.

The accompanying illustrations will give an idea of what the best toggery shops are selling. When touring for long or short distances one is obliged to consider the question largely from the standpoint of comfort, but when driving through the park there is no possible excuse for one to appear dowdy. There are so many fascinating coats and hats that nearly every type can be suitably fitted if only a little discrimination be employed in the selections. To appear fetching in auto garb is largely a mattery of millinery. Given a becoming hat and veil, a woman cannot help attracting favorable comment.

Modish women automobilists are fond of the little French hats with peaked fronts or soft brims that may be adjusted to suit the individual. Some of these have pongee or crêpe de chine curtains with long ties, while others equally as smart are held in place by big square veils arranged in any desired fashion. These veils measure two yards each way and are found in a large range of attractive combinations. A stunning veil of this type is deep cream color with cardinal polka dots and two-inch border. Another in white decorated with empire green is shown among the stylish effects. A five-yard-long veil has a white silk mesh center with brown chiffon ends; the white part is intended to cover the face and the ends arranged over the hat and hair ending in a big bow at the throat.

A charming example of how to make a picture of oneself in an automobile was exhibited by a well-known society matron a few days ago when she motored into town for a glimpse at the new spring bonnets. She wore a Scandinavian leather costume in that lovely new shade of red called dahlia; it is that soft, pinkish red obtained by uniting crimson and cerise. The skirt was made with a fitted yoke that ended below the hips in rather small scallops. The lower part was cut with many gores that flared considerably from the yoke to the hem. A trig little Norfolk jacket trimmed with stitched straps and further ornamented with flat gilt buttons reached the lower edge of the skirt yoke. A stunning hat with stitched suède brim and shirred silk crown was decorated with two long wings that inclined backwards. The effect produced was one of rare taste and discernment in costume design. A cream colored crêpe de chine veil with tucked ends protected the face and crossed at the back, where they were tied in a fetching bow that floated in the breezes a distance of a foot or more. White chamois gauntlets added the desired chic to the outfit.

For general hard use there is nothing like a motor coat of some serviceable cloth made with ample fullness and easy of access. Leather trims a number of the smartest models when it is applied in the form of strappings or merely as collar and cuffs. An attractive loose coat of rainproofed cloth in gray, with

THE GIBSON COAT IN LEATHER.
Courtesy Scandinavian Fur & Leather Co.

SILK RUBBER RAIN COAT.
Courtesy of Auto Supply Company.

light blue cross bars is trimmed with rain-spot proofed velvet. The yoke is distinctly new and practical, being fastened, as it is, on the shoulder instead of the front, where the wind has full play. The shape of this new yoke-cape, as it is best described, is particularly becoming and offers just enough of a dressy touch to make the coat suitable for all-round wear. Fancy metal buttons decorate the cape and close the fronts with a long tab. A full crown cap, with deep visor made of the same cloth, accompanies this very desirable garment and gives a very fetching effect to the whole gown as an ensemble.

Quite out of the ordinary but very elegant is a long semi-fitted coat of white mohair, trimmed with bands of black patent leather. A helmet with full plaited crown and cunning little mushroom brim is simply finished with a band of patent leather. The style is particularly well adapted for any style veil or hood and while one might imagine from the description that the shape would be trying, on the contrary it is generally becoming. Another fascinating coat for rain, wind or dust is of rubberized plaid silk in the loveliest of rich colorings. The pointed yoke is finished with pipings and the full sweep of the garment gives it a wonderfully attractive style all its own. Big puffed sleeves, finished with close cuffs, are cut in such a way that they slip over almost any style dress sleeve without disarranging its folds. A pretty little head-covering for rainy weather is in the shape of an evening hood, made to fit snugly and finished with a curtain to shed the water. The peaked top gives just enough of the picturesque to make the style attractive.

One of the newest and most dressy costumes is in elephant gray leather, trimmed with touches of crimson leather. The model is one of the smartest shown this season and is made in the Gibson style, with broad shoulder effect, full bishop sleeves and fitted body held taut by a narrow belt which joins the skirt to the waist. A knee depth circular flounce completes the lower part of the garment. Three exquisite buttons in gun metal filigree over red enamel decorate the front, that closes a trifle to one side. With this stylish costume is shown an odd little flat hat having its oblong brim stitched to give it desired firmness; the quartered crown combines both gray and red leather. Several different effects can be obtained by slight turns and twists of the brim, which makes the model one of the most desirable brought out this season.

In fashionable quarters one sees a host of beautiful empire coats worn by automobilists. An elegant silk coat in golden brown seen this week was loose fitting at back and front and had big fluted revers that fell back, revealing a sumptuous waistcoat of lemon colored leather fastened with gold buttons. The sleeves were big and long and were completed with satin wind-cuffs concealed inside the lower edges. Pongee in natural and all fashionable shades is shown extensively in the realm of smart materials for semi-dressy clothes. There is hardly anything that quite comes up to the dustproof qualities of pongee and in the best imported stock a frock or coat will look well an entire season. When the automobile spin is to end at a fashionable restaurant or theater the pongee costume with top coat to match is smart. Some of the imported pongee motor dresses are charming enough for street wear, many of them being designed by the world's best dressmakers and displaying endless amounts of exquisite hand work.

Going back to the waistcoat question, there are some elegant ones in leather, made both with and without sleeves. The double-breasted style is generally preferred and the fondness that some women have for costly buttons falls short of downright extravagance. Sometimes the waistcoat buttons will be studded with jewels to match the color of the leather; then again they will be gold filigree or etching. Antique silver buttons with big square buckles in corresponding design are shown among the recent importations, and if the craze continues we soon shall see automobile jewelry in general use.

Apropos of motor accessories, certain clever milliners are providing skillfully shaped hats, with adjustable brims, that can be turned over the back of the head, completely covering the hair. The illustration represents one of the smartest of this class in Copenhagen blue straw, trimmed with a band of velvet and two rosettes. This quaint little model may be worn in half a dozen different ways and each one equally becoming. Sensible little caps of tweed or pongee, with visors fore and aft and flaps which may be worn over the ears or fastened up on the cap, are popular for long runs in the country. Sometimes the goggles will be inserted in the front visor, in which instance the visor is adjustable and can be turned up like the ear flaps. A practical gauntlet has slats in the cuff that preserve its shape and render it possible to fold in extremely small package. These in dogskin are among the novelties lately unboxed by one of the well-known dealers.

A COMFORTABLE TOURING COAT.
Courtesy Scandinavian Fur & Leather Co.

COSTUME OF DANISH LEATHER.
Courtesy Scandinavian Fur & Leather Co.

# In and About the Crescent City

By Felix J. Koch

PURE COUNTRY MILK.

HE was from the North, obviously; had had his auto shipped to the Crescent City, where it would be transferred for the trains going West. The time hung idle in New Orleans, just a sort of holiday, between trains. Why not put it to advantage? So he resolved to hunt out queer corners of the Crescent City en automobile.

Whither and whence! He would let fancy dictate. A "Colisseum" car came along and he followed behind. It was Springy, and warm, here, this April day, but folk were wearing overcoats, and he, from the North, wondered why. He could see an old darkey "mammy" leading "massa's" children to church, and it recalled the South he had read of. He noticed the absence of barber-poles; that, down here, instead, shops had the entire front painted in red and white stripes.

He circled about the Lee Monument, toward the pretty places with their balconies out over the walk, to pillars along the curb, and it recalled the Norman cities he had autoed to. One old place had a wistaria growing over its several porticos. He stopped to maneuver past some boys playing ball here in the street, turning down a square of massive palms to a boulevard, that captivated him fairly. In the center of the street was the asphalt walk. Then a strip of lawn with the shade trees. After this, on either side the car tracks, and then the street itself, with the walks overhung with trees, now bearing their wealth of new spring leaves. There were men everywhere, working on these streets, and this despite the Sabbath. Many of the shops, too, were open, and the bootblacks were very busy. By and by he skirted a park, rather pretty, though but a square in width, and given over almost wholly to China trees—umbrella-shape ever and always. Children were skating here on the walks, as they did in his home city.

### Some of the Odd Characteristics of New Orleans.

Then he came to the "Colisseum"—a music hall he took it to be, but just the sort of old three-story Southern place he had wanted to "bag" with his kodak. Other, even prettier places, with fluted pillars to their porticos were here, and there were tennis courts in the gardens. He carried a note book, as all careful autoists should. He recorded the number of winter cars that went by, though this was to him warm spring weather. He recorded the signs everywhere about town, warning strange girls to beware of strangers, or against entering positions whereof they do not know the mistress, and it reminded him of San Francisco. Fig trees, such as he had seen in Paris gardens, were in the yards here, and their quaint Frenchy trellises, with iron spears, it seemed, set against iron uprights. Set among these fine old places was Tulane College, with its ancient piles rising amid the trees. Roofs of the houses were built projecting out against the sun everywhere in this section. Little lads with kites played on the way or in the "neutral ground," as the lawn in the street center was called.

Here and there he noticed queer pedestrians: Men with odd wicker bread baskets on their backs, such as he'd seen in Bulgaria. Again he stopped for a snapshot of the stock-brick Southern University, an old three-story edifice, with its center-front indented behind four pillars and its campus starred with trees. A typical Southern home, such as he'd imagined Sinclair's of "Uncle Tom's Cabin" to be, was here—this and a great asylum. and then the car barns. He felt he'd about reached the outskirts by this time, though there were more gardens with the folks sitting out in them, so he turned and looked for guides.

Following the car line didn't seem such a bad plan after all. Another car, marked "Henry Clay Avenue," came along, and in pursuit of it he went. Aside, however, from an occasional old negro, a quaint typical Southern type, and the "ads" of a certain "Aunt Hannah's Death Drops," and a queer southern church completely covered with ivy, except at its long, plain windows, this "up-town" section did not afford him much. In fact, small places, with awnings along the street, seemed to comprise most of the way.

By and by he was back at his caravansary. The sun, however, shone so bright it seemed no day for indoors in hotels. And what was more, he would test the cafés of New Orleans. He followed the crowds toward Fairbacher's, one of the old-timers, beyond all advertisement. There he partook of calf's-head *a la Creole*, cooked with mangoes and okra and tomatoes. Then chicken livers and beer. He noted the restaurant and its compactness. Down one side a brass rail extended, and beyond this there was a marble lunch counter, with shelves of white marble behind it, and on the top of this the pies. Mirrors with the prices painted here and there on their faces and tapestries representing varied viands completed the picture, save for the little white-clothed tables, seating four apiece, at 'tother side the rail. The food was excellent and well served.

### How the City Looked in the Afternoon.

After the meal he stopped a moment, as he paid at the door, to watch perhaps fifty of the city street cleaning carts, in line, going out for the day's wook. Seated on each was a negro, wearing a bright red shirt for uniform and marking the procession from afar.

Again he took the car for guide, this time toward "Bayou St. John." It led him through the negro section, a section much like that of a Turkish town, even to the dumping of slops out in the street, and made him wonder that yellow fever was not more prevalent than it is. Women, carrying their babies here, had a great veil tied from their arms, across the child to the mother's shoulder, so as almost completely to inclose the infant.

Then he came out at the bayou with its skiffs and other boats. Incidentally, he could do some sightseeing. But a few blocks away was the famous City Park track, where the races were then on. It was a good place to "rest" the auto, and, for a time, he nosed about. Took snapshots of Lady Katherine, a descendant of Roselyn III, the famous two-year-old of the Colonel, and Sweet Sunshine and other steeds. Then, of the racing men scattered promiscuously about, among the fifty cent and dollar seats everywhere.

The center of the park was one great lawn, about which a white-painted fence stretched, and then, encircling this, a broad gravelly track. This in its turn was encircled on one side by the long, one-story horse sheds, such as he had seen at the home city, and among which a man was just then peddling bananas. Over on the other side the large two-story stable of Colonel Nemo, famous as a turfman, arose, these and those of another race man, built in the southern style. There was the large, modern grandstand, and before this, at the track, the starter's cupola. Opposite this, the signboard with the time of the different horses coming in, the clock and the bell. In distance, he could see the mile-posts marking out the course.

Somehow or other, however, city autoing was paling by this time. He turned cityward with just a trifle of a surfeit. Going out he had passed a theater, where the poorer class seemed to go. It might give him a peep at New Orlean's underworld, so

he left the auto in garage. As it proved, the theater was the Lyric and the play nothing worse than "David Copperfield."

Here was still time for a parting glance at New Orleans. From the St. Charles he sent his *chauffeur* down to the train with the valises, and then betook himself to the stores for souvenirs of his stay. Little bales of cotton, with darkeys bearing rice strands atop, were the most typical things he could find.

Again the call of the French restaurants lured him. He stepped into one, where the orchestra was playing the "Blue Danube," and following this up, then, with "Give My Regards to Broadway."

It was supper time in New Orleans, and he was curious to see what they ate. Six fried oysters, of which the people are inordinately fond, buying at thirty cents the half-dozen, chicken salad, beer and a charlotte russe seemed a favorite combination. He admired the young women with their sleeves cut at the elbow; he admired the gallant young men. By and by the clock showed him that it was time he were stirring. The auto by this time would be aboard the car.

Wearily he retreated to the hotel for his parcels, and the great postal album he would carry. Then, equally weary and somewhat stiff, he loitered down to the train.

The berth in the sleeper looked decidedly good.

## GERMAN NOTES.

BERLIN, April 9.—Entries will soon close for the Herkomer, and they promise to outstrip all expectations. Great preparations are being made everywhere to make this third contest a record one, but till now it has not been possible to go entirely over the course owing to the snow in the mountains. The Dresden-Chemnitz-Zwickau route, originally the bugbear of the committee owing to its water-cuts, is now in very good order.

A company has been formed at Munich to open up a line of motor coaches in the neighborhood of the Bavarian capital, penetrating for the present as far as Kochel in the Bavarian Alps, with further extensions later on. Four different tours have been fixed for the present, and the fares are moderate.

TULANE UNIVERSITY, NEW ORLEANS.

OLD FRENCH QUARTER OF THE CRESCENT CITY.

OUT THE BOULEVARD TO THE CITY CEMETERY.

A TYPICAL SOUTHERN HOMESTEAD.

## NEWS IN NEW ORLEANS.

NEW ORLEANS, April 20.—Owing to the fact that the roads in and about New Orleans are not in a condition suitable for automobiles, time and endurance races in this section are not common. The only road leading out of New Orleans is one that follows the course of the river for some distance. In good weather the cars can run at full speed safely, but after a series of rains, passage over them is very difficult. It is believed, however, that there is an old military road leading out from Covington, La., to Memphis, Tenn., which, if it is true, will afford the autoists a new field for their operations. Palmer Abbott has recently ordered a large shipment of cars to New Orleans, one of which will be shipped to Covington, as there is no direct road between there and New Orleans. He will then go to Covington to investigate the road for himself. If it is found desirable it is thought that several races will be arranged for in the near future, as there are a large number of enthusiasts in the city who long for excitement beyond the asphalt.

The Louisiana Automobile Association has not been doing much of late, and interest in that particular direction seems to have somewhat dissipated itself, despite the fact that the sale of cars in this city continues to be rather large.

The only tour of any particular note which has taken place lately occurred about a month ago, when Earl Knobloch made the trip from New Orleans to Thibodaux and back, a distance of 250 miles, in fourteen hours. Mr. Knobloch says that that is about record time for the trip, and shows an average of about 18 miles per hour. He made the trip in a 1907 Oldsmobile, leaving New Orleans Friday at midnight, and arrived at Thibodaux, having passed through Donaldsonville early Saturday morning, and having made only one stop, for his breakfast. At 2 P. M. the party started home, arriving here at 9.30 Saturday night. The tool kit was not touched throughout the trip. The roads on this particular trip were good, which cannot always be said of them, though of late years they have been improved.

# SPRINGTIME'S ADVANCE STIRS CLUBS TO ACTION

### Canada Has an Active Club at Winnipeg.

WINNIPEG, CAN., April 22.—The annual meeting of the Winnipeg Automobile Club took place April 17, when the following officers were elected: Patron, Sir Daniel McMillan, Lieut. Governor of Manitoba; honorary president, J. C. G. Armytage; president, Judge Phippen; first vice-president, R. M. MacLeod; second vice-president, T. M. Belcher; secretary-treasurer, W. C. Power. Forty-seven new members were elected, bringing the total membership of the club to over 100, and a further election of some thirty members will be balloted for at a special meeting to be held at an early date.

It was decided to promote a reliability contest extending over a period of not less than three days, the choosing of the routes to be left to the touring and racing committee for selection. The entries will be divided into two classes, the first for touring cars and the second for runabouts. Handsome trophies will be provided for competition.

A special legislative committee was also appointed to watch the interests of automobilists in regard to any measures that the authorities may bring forward for the control of automobiles in Manitoba, and a special member's card will be provided, signed by the president and the chief of police in order that the members can be saved the necessity of proceeding to the police station under arrest in case of trouble, the card being accepted as a guarantee for appearance when summoned to attend.

The retiring secretary, A. Emmett, who has held the position for the last three years, was presented with a purse in recognition of his services to the club.

The good roads movement organized last year is receiving the support of every user of a vehicle of any description, and great efforts are being made to boost the movement to a successful issue. Government support is being sought for road improvements and a special grant will be asked for at the next session of the provincial legislature.

### Motorcycling at Harvard is Popular.

CAMBRIDGE, MASS., April 22.—Motorcycling is having quite a boom at Harvard University. The motorcycle club organized there two years ago has taken a new lease of life, and will begin work in earnest this spring. The club was founded in 1905 by L. E. French, H. G. Hawes and W. M. Davis 2d., and held a successful hill climb that year on Commonwealth avenue, Brighton. The attempt at organization proved rather premature, however, and only recently has much interest been aroused. Now there are about twenty machines in use in the university, and it is believed that the owners of all of these will join.

The club has made arrangements with the Harvard Automobile Company for the storage and care of members' machines at reduced rates in the new garage on Quincy square. Weekly runs will also be held as soon as the roads are in suitable condition, and another hill climb is in prospect. Nothing definite has been decided about this, but the date will probably be April 30.

### Sons of Eli Form the Yale Automobile Club.

NEW HAVEN, CONN., April 22.—A meeting of all the men in college interested in forming the Yale Automobile Club was held last evening at the University Club in this city. After a general discussion as to organization, the following officers were elected: President, George H. Townsend, '08; secretary, W. Morden, '08; treasurer, E. H. Butler, '07. A committee of four was appointed by the president to arrange a series of meets and hill-climbing contests. Thirty members have already shown their intention of joining the club.

### Washington Club Objects to Young Drivers.

WASHINGTON, D. C., April 22.—The Automobile Club of Washington is favoring the adoption of a proposed amendment to the automobile regulations prohibiting the operation of automobiles by all persons below the age of eighteen years. Such a regulation has been drawn by the corporation counsel and it will probably be put into effect within the next thirty days. The proposed regulation was framed at the suggestion of the District Attorney, who stated that the grand jury now sitting had called his attention to the number of accidents resulting from the operation of automobiles by boys.

It will be remembered that the automobile board of the District of Columbia has frequently recommended the adoption of the 18-year age limit, on the ground that persons under that age are physically unable to operate automobiles. As far back as 1903 the matter was referred to the then corporation counsel, who stated that while it was within the power of the District commissioners to promulgate such a regulation, he did not deem it expedient to adopt an iron-clad rule, as to refuse to permit everyone under 18 years of age to operate a car would manifestly prevent the use of automobiles by persons who are fully as competent as persons much older.

On the other hand, Secretary Woodward, of the automobile board, does not believe that any distinction should be made. He states that in his opinion not one boy in a hundred is competent to handle a car at a time when a cool head is required, no matter how skillful a driver he may be.

### Yorkians of Pennsylvania Re-elect Officers.

YORK, PA., April 22.—A pleasure run was arranged and officers for the ensuing year elected at the annual meeting of the York County Automobile Association. The pleasure run will be from this city to Hanover and return, Sunday, May 5. The local autoists were extended the invitation through Thomas J. O'Neill, the second vice-president of the association, who resides in Hanover.

All of the association's officers were re-elected as follows: President, Dr. J. F. Klinedinst; first vice-president, Clarence A. Geesey; second vice-president, T. J. O'Neill, of Hanover; treasurer, Gordon Nes; secretary, Stuart B. Lafean. During the meeting the coming endurance run of the Harrisburg Automobile Club was referred to, and it is the general opinion here that many Yorkers will contest for the cups. The first night's stop in the endurance run will be made in this city.

### President Duttenhofer Re-elected by Cincinnatians.

CINCINNATI, April 22.—At the annual meeting of the Automobile Club of Cincinnati, the following board of governors and executive officers were elected for the ensuing year: President, Val Duttenhofer; first vice-president, Dr. A. B. Hyl; second vice-president, F. N. Temple; secretary, Dr. L. S. Colter; treasurer, C. Gordon Neff; consulting engineer, E. J. Carpenter; governors, the above and Dr. McKim Cooke, Gustav W. Drach, Dr. C. L. Bonifield, W. B. Gotherman, Harry L. Mauss.

The annual report of the secretary showed a membership of about 200. It was voted to appropriate $1,000 to be expended by the committee on guide posts in the erection of sign boards at the intersection of all the prominent roads in Hamilton county, and the estimate calls for 150 of these useful indicators. The club also passed a resolution containing a number of suggestions to be forwarded to the local chief of police defining the position of the club on local conditions pertaining to automobiling, the chief of which are as follows: A firm stand against fast driving and exceeding the speed limit, particularly in the city;

advocating that the police arrest drivers with old or no tags, and smart drivers who put their tags on front of cars, instead of rear, as prescribed by the law; to discountenance the use of siren horns for city driving; to discountenance the payment of fines of chauffeurs by owners of cars when owner is not in car; to furnish members with maps of the local roads, and asking members to make reports on special roads.

### Controls Selected for the New Jersey Endurance Run.

NEWARK, N. J., April 22.—The special committee of the New Jersey Automobile and Motor Club, headed by Louis T. Wiss, has made a tour over the route selected for the three-day endurance contest scheduled for May 30-June 1, and definitely named the controls which will be utilized during the run. On the first day's run the checking points will be Morristown and German Valley, stop being made at Washington for luncheon. There will be but one control in the afternoon, Somerville being designated as the place, the finishing point for the first day being at Newark. Starting from Newark on the morning of the second day, the contestants will run free to New Brunswick, where the first control will be situated. After New Brunswick will come Trenton and Mt. Holly, where the tourists will stop for luncheon. White Horse Tavern, Egg Harbor City and Atlantic City will be the checking points for the afternoon.

It is not yet entirely certain where the noon control for the last day will be placed, although Freehold is favored by the committee if accommodations can be obtained. Stations previous to Freehold will be Tuckerton and Toms River.

### Minneapolitans Elect Asa Paine Their President.

MINNEAPOLIS, MINN., April 22.—At the annual meeting of the Minneapolis Automobile Club, Asa Paine, formerly the club's vice-president, and president of the Florida East Coast Automobile Association, was unanimously elected to the presidency. The other officers elected are: First vice-president, Horace Lowry; second vice-president, Benjamin F. Nelson; secretary, R. J. Smith; treasurer, J. H. Riheldaffer.

Retiring President Joyce, in a short speech, congratulated the club on its growth and prosperity. He pointed out that within a year the membership of the club has been increased by 227 members, making a total of 500.

The report of the treasurer showed that the finances of the club are in sound condition and that the clubrooms have been a source of profit rather than of expense. Following the discussion of this subject the club turned to the interesting topic of good roads, and might be talking about them yet had not the call to back rooms, where a buffet lunch was ready, interrupted. The members resisted just long enough to authorize the appointment of a committee of five to confer with Mayor J. C. Haynes relative to the enforcement of the ordinance against throwing bottles, glass and rubbish into the streets.

## CLUB DOINGS IN GENERAL.

**Brooklyn, N. Y.**—The Runs and Tours Committee of the Long Island Automobile Club, following the custom of previous years, has chosen the first Saturday in May for its annual spring run. The club's May run has always brought out a representative number of cars, and this is expected to surpass all others.

**Philadelphia.**—The elegantly appointed quarters of the Ladies' Quaker City Motor Club in the Hotel Majestic were opened on Monday night, the April meeting being held there. Early in May a "housewarming" will be held, on which occasion the male friends of the members will be invited.

**Montclair, N. J.**—It is expected the first meeting of the Montclair Automobile and Driving Club will be held next week. The plans of the organizers are to have the first meeting take place at the new Hotel Montclair, which is expected to open on May 1. Over 125 autoists are expected to join.

# THE AUTOMOBILE CALENDAR.

## AMERICAN.

### Shows and Meetings.

May 28-31.....—Indianapolis, Ind., Annual Meeting American Society of Mechanical Engineers.
Oct. 31-Nov. 7..—New York City, Madison Square Garden, Eighth Annual Automobile Show, Association of Licensed Automobile Manufacturers.
Nov. 30-Dec. 7..—Chicago, Coliseum and First Regt. Armory, Eighth Annual National Automobile Show, National Association of Automobile Manufacturers.

### Races, Hill-Climbs, etc.

May 6-7.....—Harrisburg, Pa., Two-day Endurance Run, Motor Club of Harrisburg.
May 30.....—Philadelphia, Hill Climb, Monk's Hill, Quaker City Motor Club.
May 30.....—Chicago, Memorial Day Race Meet of the Chicago Motor Club.
May 30.....—Bridgeport, Conn., Hill Climb, Bridgeport Automobile Club.
May 30-June 1..—Newark, N. J., Three-day Endurance Run of the New Jersey Automobile and Motor Club.
June 12.....—National Orphans' Day, instituted by the American Automobile Association.
June 20.....—Albany, N. Y., Annual Tour of the Albany Automobile Club, Route, via New York and Asbury Park, to Atlantic City.
July 10.....—Cleveland, O., Start of Fourth Annual Tour of the American Automobile Association, for the Glidden Trophy. Finishes in New York City on or about July 23.
Oct. 19.....—St. Louis, Mo., International Aerial Race of the Gordon Bennett Prize. Aero Club of America.

## FOREIGN.

### Shows.

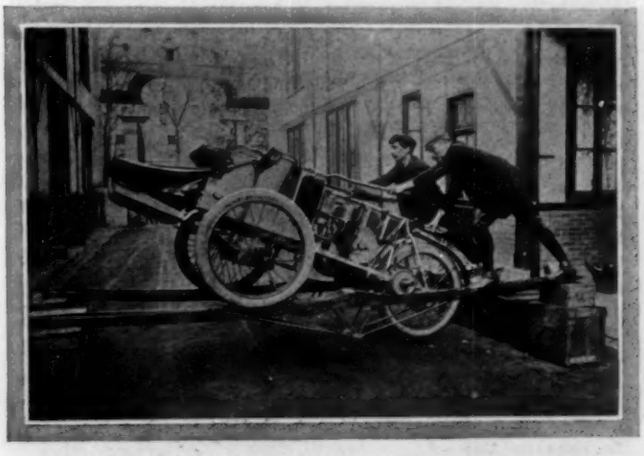
May 4-15.....—Madrid, Spain, Automobile Exhibition, Palace of Fine Arts, Royal Automobile Club of Madrid.
May 15-26.....—Zurich, Third Annual Swiss Automobile Show.
June 25-30.....—St. Petersburg, Russia, Automobile Show.
Nov. 12-Dec. 1..—Paris, Exposition Decennale de l'Automobile, Grand Palais, Esplanade des Invalides, Automobile Club of France.

### Races, Hill-Climbs, etc.

April 28.....—Chateau Thierry Hill Climb.
May 4-14.....—Spring Wheel Competition, A. C. of France.
May 15-31.....—Belgium, Industrial Vehicle Trials, Automobile Club du Nord.
May 18-21.....—Milan, Italy, Touring Club Trials.
May 22-25.....—Irish Automobile Club Reliability Trials.
May 24-27.....—Voiturette Contest, Automobile Club of Austria.
May 28.....—Isle of Man, Tourist Trophy Race, Automobile Club of Great Britain and Ireland.
May 30.....—Isle of Man, Heavy Touring Car Race, Automobile Club of Great Britain and Ireland.
June 3-12.....—Paris, Electric Vehicle Competition, Automobile Club of France.
June 3-12.....—Herkomer Cup, Automobile Club of Bavaria.
June 14.....—German Emperor's Cup, Taunus Circuit, Imperial Automobile Club.
June 20-22.....—American Gold Cup, Start from New York of European Tour for American Cars, Georges Dupuy, secretary, 1402 Broadway, New York City.
June 14-29.....—Scottish Reliability Trial, Scottish Automobile Club.
July 2.....—Grand Prix, Automobile Club of France.
July 14, 1908....—Paris to London, Aerial Race.
July 15-18.....—Ostend Week, Record Trials, Automobile Club of Belgium.
July 21.....—Ardennes Circuit (Belgium).
July 31.....—Liedekerke Cup for Touring Cars, Ardennes Circuit, Belgium.
July 31-Aug. 8..—Belgium Regularity Contest for Touring Cars, A. C. of Belgium.
August 1-7.....—Criterium of France, 1,750 Miles Touring Competition and 250-mile Race for the Press Cup. A. C. of France.
August 11-29...—France, Coupe de Auvergne.
Sept. 1.....—Italy, Brescia Circuit, Florio Cup. A. C. of Italy.

## SIX CARS READY FOR PEKIN-PARIS.

PARIS, April 15.—Pekin-Paris on auto is now a certainty. The Chinese Minister of Foreign Affairs at Paris, having communicated the fact that the contest is authorized by his government, June 10 has been fixed as the date of departure from the Far East. Certain starters are Fiat, Itala, De Dion Bouton with two cars, Contal with a tri-car, and Spiker a 40-horsepower Dutch machine. An illustration is given herewith of the Contal tri-car to be driven by Pons, fully equipped for its long trans-Siberian journey. The power plant is of the standard type, but the machine has been specially equipped and fitted to carry the spare parts and special tools which may be needed for a journey over a country which has never known other modes of locomotion than the camel caravan. Pons is shown crossing an imaginary ditch by means of the portable bridge which he carries with him on metal brackets at each side of the car. He has a complete camping outfit, for frequently the automobilists will have to pitch their tent in the open air, far from dwellings, spare tires, and extra provision for gasoline. The Spyker has an open touring car body, the entire tonneau of which is fitted up with spare parts, jacks, tools, camping outfit and the thousand and one necessaries for such an adventuresome trip. The whole is



FRENCH TRI-CAR EQUIPPED FOR PARIS-PEKIN RUN.

covered over with a tarpaulin mounted on a light frame. Pons, the Contal driver, left Paris this week by road for Marseilles, where he will embark on the Oceanien for the East. Cormier, the De Dion conductor, left here a week ago by train for Pekin to make arrangements for establishing gasoline and tire stations on the route. His machine will leave from Marseilles together with that of Pons. Although the German consul at Shanghai states that the majority of automobiles in that city are of American and British manufacture, these two nations are not represented in the tour.

## ABUSE WITH THE HARD "SOFT" HAMMER.

Thirty or forty years ago there were hammers made of babbitt that were really soft and left no mark. Now they are made of scrap copper or dross of bronze or other indescribable compounds, says the *Mechanical World*. Knuckles and corrugations gather on their wrinkled faces, and their impressions can be seen and felt all around the twentieth century locomotives. The mechanic who has ever finished a strap knows that there is a silken softness about a finely finished strap or other highly polished unhardened metal. He begins operations with a block of wood. The soft hammer breaks the wooden block into a thousand pieces, and there is no time to keep up the supply of timber, so in the general hurry and confusion incident to getting the engine out the alleged soft hammer begins to get its work in. Hammers of lead or babbitt are comparatively harmless, and easily made.

EN AUTO TO THE FINAL RESTING PLACE.

Automobile electric hearses have been introduced in Berlin by the company which first placed the taximeter cab in service in that city.

Small bars of lead are very useful in adjusting the finer parts of a machine. The bars can be readily held on the strap, or key, or bolt head, and a straight and effective blow can be struck by the ordinary hand hammer. In any event, the copper hammer, so-called, should be abolished or reformed altogether. The element of durability is its worst feature. It hardens as it grows older. Its blows mar the finest features. Like the leprosy or the smallpox, its victims are known at a glance.

## SOME JOYS OF CAMPING A LA AUTOMOBILE.

As a means of recreation during the dog days of summer, it must be admitted that there are few things to equal camping, but when, to add to its pleasures and rob it of some of its inconveniences, the automobile is thrown in, it is indeed a pastime for kings. Not a few venturesome autoists in appreciation of this have fitted their cars up in various ways, some of them with most wondrously contrived kits, others utilizing the car both as a conveyance and as a sleeping room. The accompanying photograph pictures somewhat of a variation on any of the foregoing, for it may well be termed a typical automobile camp, in that a canvas garage has been provided for the car, in addition to the "grub" and sleeping tents.

The car is a Thomas Flyer and is the property of Hon. S. R. Dresser, Bradford, Pa., who is an advocate of the open-air life. For the ingenious method shown of sheltering the car against the weather while in camp, his chauffeur, F. C. Rupp, is responsible, and it is one that may be followed to advantage.

MODEL CAMP OF THE HON. S. R. DRESSER, BRADFORD, PA.

THE AUTOMOBILE

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***Tire Limitations Becoming Better Recognized.*** Nothing has better demonstrated the force of the saying that the more a man knows about a thing the less disposed to complain he becomes, than the past year or two of tire history. True, there are still those who damn the pneumatic tire unceasingly and try something else, only to come back to it in the end; they are the ones who have yet to learn. Once they have matriculated and joined the ranks of the seasoned autoists, they no longer waste time in vilifying pneumatic tires in general and the one brand of their personal experience in particular—simply because they know. No one is in a better position to realize that, despite all its shortcomings, there is nothing to replace the pneumatic tire than the autoist who has been induced to join in the hunt for this will o' the wisp by unfortunate early experiences. The majority learn without going through the mill of substitutes.

The autoist who knows realizes that there are worse things than punctures, and does not sacrifice his all to gain this one end. There can be no gainsaying the fact that tire maintenance is still the most substantial item in keeping a car, but experience has shown that, with other forms, speed and comfort are sacrificed to a very questionable gain in outlay; it would perhaps be truer to add that the expense has not been decreased materially—simply transferred to another account. Commendable efforts are being made to discover a working substitute for the pneumatic tire, and the number of devices already brought forth is legion. Many are ingenious, others promise well, but none is quite the equal of the rubber-confined compressed-air cushion. Like gold, rubber comes high, and near-rubber in a tire is just about as valuable as near-gold in jewelry; there are numerous things which have many of its attributes, but they all lack the one most important—they are not rubber. Experience has shown that, given the proper sizes to begin with, a little care and reasonable use means value received from the pneumatic tire in every instance, and this is what the average autoist has come to realize.

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***Consideration for Other Users of the Highway*** "To sum up the whole situation, the motorist on the road can ill afford, for the sake of the sport, to make a single bad friend by any act of omission or commission," says Charles J. Swain, president of the Quaker City Motor Club, in the course of an article entitled "Courtesy on the Highway." Unfortunately, there are far too many autoists who consider the vastly greater power and speed at their command than is granted to other users of the highway to control, as sufficient license in itself for ignoring any rights those others may possess. The autoist who is also a horseman, and who has occasion to use the country roads himself when drawn by the faithful Dobbin, is in a position to realize the helplessness of the man behind the horse, as well as the feeling of impotent rage which sweeps over him when he sees his rights thus deliberately trampled upon. To be commanded peremptorily to clear the road by a car yet half a mile away, with its long-drawn wail, is certainly bad enough.

But it does not compare for an instant with the wholly inconsiderate habit the same type of user has of rushing around corners on narrow country roads without giving a thought of what may lay beyond. Mr. Swain remarks, in the course of the article referred to: "I would lay special stress upon consideration for the farmer. The harboring in his mind of an injury, real or fancied, cannot but incur his enmity." Surely this habit of attempting to usurp the entire highway, both on straight stretches and turns, is not a fancied wrong; it is the prolific cause of accident and always of hard feeling. Only through consideration for other users of the road, which is regrettably absent in the actions of a number of autoists, can the advocate of the power vehicle, who uses the road for his pleasure, and the country resident, to whom it is an absolute necessity, meet on a common ground.

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***Increasing Use of Anti-Friction Bearings.*** In few essentials of the car is the general trend toward improvement more noticeable than in the constantly increasing use of anti-friction bearings of different types. As it first came forth, particularly in this country, the automobile was a piece of mechanism that depended upon the regulation type of plain bearings for practically all of its moving parts. The lessons taught by the bicycle were shortly taken advantage of, so that almost from the beginning at least the road wheels have run on an anti-friction bearing, patterned at first after bicycle practice. It required an equally short time to demonstrate that both the plain bearing and the old ball bearing were unsuited to the new duties.

Next to the wheels, the part of the car that showed itself to be most in need of an improved type of bearing was the change-speed gear box, and there is little doubt that experience in the use of ball bearings on this essential has done much to further their adoption on other parts of the car. The same is true of the roller bearing, of which two or three types are in current use both on wheels and in change-speed gear boxes as well as for bevel-gear drives and rear axles. In short, the car that does not employ some sort of anti-friction bearing, at least for the sliding gear set, is an exception that would be difficult to locate. From this it has been but a step to the introduction of such bearings in the motor itself, and though the number thus equipped is still considerably in the minority, the fact that their use for that purpose is on the increase is evident. It is scarcely necessary to enumerate their advantages over the plain type in any capacity on the car; the chief drawback would appear to be that of initial cost, but the greater durability and freedom from trouble accompanying their use are rapidly overcoming that objection.

## MICHIGAN'S A. A. A. STATE ASSOCIATION.

DETROIT, MICH., April 22.—As expected, there was little difficulty in forming the Michigan Automobile Association of the A. A. A. Representatives of the Grand Rapids, Saginaw, and Detroit clubs met in Detroit last week and perfected an organization in a few hours. These officers were chosen: President, Edwin S. George, Detroit; vice-president, Dexter M. Ferry, Detroit; secretary, Dr. D. Emmett Welsh, Grand Rapids, and treasurer, J. R. Jackson, Grand Rapids. Paul H. Deming, a member of the national touring board and of the Detroit Automobile Club, was named as a director.

The Detroit, Grand Rapids and Saginaw clubs are the charter members of the new organization, but assurances have been received from Kalamazoo, Muskegon, Battle Creek, and Jackson that automobilists in those cities are taking steps to organize clubs which will join the State body.

D. M. Ferry, Jr., was made chairman of the State legislative committee and J. R. Jackson, of the membership committee.

The forming of the association will mean considerable to automobilists of the State. It will insure for one thing that there will be annual runs between Grand Rapids and Detroit. Grand Rapids will offer prizes at this end of the line for the Detroit enthusiasts to compete for, and the Detroit club will offer prizes for local autoists to contest for. Annual State tours will also be held.

## IMPORTERS TO FORM ORGANIZATION.

Initiatory steps for the formation of the Automobile Importers' Society were taken at a meeting held Tuesday afternoon, April 23, at the clubhouse of the Automobile Club of America, New York City. The meeting was held in conjunction with the show committee and officers of the Automobile Club of America, and the show situation was discussed, after which the importers held a session of their own. In attendance were A. Massenat (Panhard), Sidney Breese (Westinghouse), Paul Lacroix (Renault), Percy Owen (Bianchi), G. R. Rheims (C. G. V.), A. C. Newbauer (Delaunay-Belleville), W. H. Bernard (Delahaye and Pilain), Arthur Waterman (Gobron-Brillie), A. M. Thackara (Westinghouse). Letters in favor of the movement were also received from Robert Fulton, of the Mercedes Import Company, and H. C. Cryder, of Cryder & Co. The Automobile Club was represented by President Colgate Hoyt, Secretary S. M. Butler, and the show committee, consisting of Col. George Moore Smith, chairman, Alan R. Hawley, Winthrop E. Scarritt and Geo. F. Chamberlain.

A call was issued inviting all independent automobile importers to another meeting to be held at the same place, Friday afternoon, April 26, when it is expected to permanently organize.

## ITALIANS VICTORIOUS IN TARGA FLORIO.

Fiat was victorious in the opening round of the great European racing tournament, when Nazzaro captured the Targa Florio last Sunday on a wild mountainous circuit in Sicily, and Lancia, the eternal second, lived up to his reputation. The race was three times round the most difficult circuit in Europe, the number of sharp turns on each round being about one thousand, total distance being 279.6 miles. Of the fifty-four cars entered for the event, forty-five were sent away at intervals of one minute, Pilain, taking the lead followed by Benz and Darraeq. Four European nations were represented by twenty important firms, the drivers including such well-known figures as Lancia, Wagner, Duray, Gabriel, Nazzaro and Hanriot. Albert Clément, who was engaged to pilot a Bayard-Clément machine, was unable to compete owing to the French military authorities refusing to give him leave of absence. After a keenly contested race, rendered still more exciting by the heavy rain which had made the mountain roads slippery, Nazzaro secured first position in 8:17. Lancia, also on a Fiat, finished eight minutes later, and Fabry on an Itala was third. Last year the Targo Florio was won by Cagno on an Itala.

## NEW ENGLAND SECTION BLUE BOOK READY.

The New England section of The Automobile Official A. A. A. 1907 Blue Book has just been published. It is a handsome volume of 534 pages covering the best and most popular touring routes in the New England States with a completeness and exactness previously unattained. For 1907 the Blue Book is divided into three convenient-sized volumes, together giving an increase of about 50 per cent. over the single volume of last year. Sections 1 and 3, now in progress of preparation, will deal respectively with New York State and the West, and with New Jersey, Pennsylvania, the South and the West.

The New England book is prefaced by a special section giving the Metropolitan district, Shore Line, and Hudson River connections into New England, the return and connecting routes being covered by the complete sections in the same volume. Altogether, 17,000 miles of road are described and covered almost entirely by marginal maps. Among the entirely new features are general maps covering the entire country in miniature, the special purpose of which is to show the relation of one route to another—in other words to show at a glance how the different marginal maps in the body of the book meet and connect with the route system of the volume as a whole.

For the first time an index of principal trunk lines has been provided, outlining the through routes along the principal courses of road travel in New England. The index of places has been materially enlarged and made more definite and useful. A chart of automobile laws in condensed form occupies three pages of the book, giving the requisite information on registration, fees, numbers, lamps and speed laws for the New England and Middle States. Other tables give the essential facts of the different boat lines, their landings, time of departure from principal ports, and freight rates for the Hudson River steamboats, the steamships on the New England coast, as well as those connecting New York with the Atlantic ports and the West Indies. There is valuable information on European custom duties, freights, regulations, and laws in all the European countries generally visited by American tourists, arranged in the most convenient manner.

Altogether there are 285 routes, covering 17,469 miles of roads, 137 route maps, 19 full-page maps, 71 city maps, and two double-page maps. The volume which is elegantly produced and strongly bound in genuine leather, is listed at $2.50 prepaid, from the Class Journal Company, publishers of THE AUTOMOBILE, Flatiron Building, New York City.

## ANOTHER NEW YORK-BOSTON AEROCAR RUN.

BOSTON, April 23.—An unusual incident marred the New York-Boston non-stop effort of A. E. Robbins with the same air-cooled Aerocar which he successfully drove between the two cities at the time of the Boston show in March. Starting from New York City at 1:15 A.M., excellent time was made until within a few miles of Bridgeport, Conn. At this point the spark throttle failed to do its function, owing to the loosening of a set screw, and the engine came to an exasperating stop. Soon making the repair, Mr. Robbins restarted the engine, which worked beautifully thereafter the balance of the run, which terminated at 5 P.M. at the Boston Aerocar agency. Air-cooled non-stops are infrequent, and to-day's run was noteworthy. Besides the driver, there were George Van Cleve and two observers as passengers.

## MEMORIAL DAY RACE MEET AT BOSTON.

BOSTON, April 22.—Boston is to have an automobile race meeting this spring after all. For a time it looked as if the Bay State Association would give up its annual custom of holding a meeting at the Readville track, but after it was announced that the Worcester club would abandon its hill climb, the pressure for some sort of a competitive event became so great that the racing committee of the Bay State Association, at its meeting this week, voted to hold a series of races on Memorial Day at Readville. The committee consists of President L. R. Speare, Charles E. Fay and F. A. Hinchcliffe.

## SUBSTITUTES ACTIVE IN AUTOMOBILE OILS.

Success in any business necessarily brings the substitutor and the imitator. Up to this year the substitutor has not been much in evidence in the automobile business, but recently he appears to have become active in the oil trade. Owing to the fact that automobile owners have become better educated in the use of lubricants during the past year, legitimate manufacturers have built up big businesses in particular brands of oil, with the result that imitators have become numerous. Only last week, the Columbia Lubricants Company, of New York, which has suffered considerably at the hands of firms imitating its trade mark, procured an injunction in the United States Circuit Court for the northern district of Ohio, restraining the Atlas Oil Company of Cleveland from the use of the word "Monogram" to designate certain lubricants sold by them. The bill alleges that the plaintiff has built up a large and profitable business on account of the excellent quality of their goods, which would probably have continued to be a source of great profit were it not for the acts of infringement and unfair competition charged to have been committed by the offending firm.

A lubricant known as "Panhard" oil, on the market for several years, has established a good reputation. The oil was named when the Panhard car was first prominent in racing. The fact that the oil was found particularly applicable to the Panhard machine and was used by one of the racing cars of that make led the manufacturer, George A. Haws, to designate it as "Panhard Oil," meaning an oil especially adapted to engines of the Panhard type. As a claim of the quality of the oil the firm designated it as "The oil that will not char." That was in 1904. Recently another oil concern secured a letter from the local agency of the Panhard car, authorizing it to use the name "Panhard," and it is now marketing "Panhard Oil" and it is claimed profiting by the extensive advertising and reputation which the "Panhard Oil" manufactured by George A. Haws has built up.

In Philadelphia, Chas. F. Kellom & Company manufactures a lubricant known as "Invader" oil, and as such it is known all over the country. Recently the firm has heard from various parts of the country that other concerns were selling oil under the name of "Invader Oil." In one case when a salesman for the imitator called on a regular customer of Kellom & Company and was told that they intended to place an order for "Invader" oil he unblushingly stated that his firm made "Invader" oil for Kellom & Company and could fill the order at once.

These are a few samples of what the legitimate concerns in the automobile oil business are subjected to, and owners of cars who have been accustomed to using certain oils will find it to their advantage to be positive that the oil they are buying is the oil they intend it should be.

The following are the names of principal firms making automobile oils and the names of the oils which they market:

| | |
|---|---|
| Columbia Lubricants Company, | Monogram oils |
| Fiske Bros. Refining Company, | Lubroleine |
| Harrington Lubricant Company, | Harrington oils |
| A. W. Harris Oil Company, | Harris oils |
| Havemeyer Oil Company, | Havoline oils |
| George A. Haws, | Panhard oils |
| Chas. F. Kellom & Company, | Invader oils |
| Wm. P. Miller's Sons, | Panolite |
| N. Y. & N. J. Lubricant Company, | Non-Fluid oils |
| Penn Petroleum Company, | Pennsylvania oils |
| W. C. Robinson & Company, | Autoline |
| Orlando W. Young, | Young's oils |
| Vacuum Oil Company, | Mobiloil |
| Valvoline Oil Company, | Valvoline |

**Philadelphia.**—A new local organization of motorcyclists—the Pennsylvania Motorcycle Club—was launched in this city last week through the efforts of George W. Morley. Temporary quarters have been secured at 262 North Broad street, and a permanent organization will be perfected during the present week.

STODDARD-DAYTON, FIRST OF THE 1908 SIX-CYLINDERS.

## ADVANCE MODEL OF THE STODDARD-DAYTON.

In quite striking contrast with the methods of but a few years back is the present-day manner of taking time by the forelock practiced by the automobile manufacturer. Then it was a struggle to get new models out in time for the January show, and more often than not they were only finished a few hours before, or were sent incomplete. Now the makers are patterning after those newspapers whose evening editions are on the streets at 7 A.M., so that though it is yet but April, and the season is not in full swing, 1908 models are beginning to appear. One of the first to be uncovered is the six-cylinder Stoddard-Dayton shown by the accompanying photograph. It is to be a 50-60-horsepower, seven-passenger car, with a 128-inch wheelbase and 36-inch wheels. One of the features of the power plant will be the use of duplicate ignition systems, one of which will employ the Bosch magneto. All on, the car will weigh 3,500 pounds, and no doubt will be a worthy addition to the Stoddard-Dayton line.

## AN M. D.'S UNUSUAL RECORD IN A MAXWELL.

Not many autoists can point to a mileage such as Dr. Hess—a well-known ministrator to the ills of humanity on a part of the Pacific Coast—has rolled up in his Maxwell within the past year or so. Even more remarkable than the fact that he has driven his Maxwell Tourabout 16,000 miles in that period, is his achievement of making 12,000 miles on a single set of tires, which speaks well for both car and driver. Dr. Hess considers the automobile an indispensable adjunct to every up-to-date physician's outfit, not alone on the score of convenience, but that of economy as well, for on occasion he was compelled to charter a special train to reach a patient in a remote part of his district before becoming an autoist. The accompanying photograph shows the doctor in his 1906 Maxwell, and he has already placed his order for a 1907 model of the same make.

DR. HESS IN HIS RECORD-BREAKING MAXWELL.

## RECENT TRADE DOINGS AT AKRON.

AKRON, O., April 22.—The B. F. Goodrich Company, largely on account of the growth in its tire trade, expects to begin work on a new five-story addition within two weeks for factory purposes. The building will be devoted to other manufacturing in addition to tires also. The company is also arranging to construct at the same time an immense office building which will be five stories high and 125 feet long by 50 feet wide. This will be devoted to office work solely, and will be one of the largest office buildings in the country. The company is now employing 2,700 people. Both buildings will be constructed of fireproof reinforced cement similar to the additions constructed last year.

It was announced last week that the International Harvester Company, with headquarters at Chicago, will begin the manufacture of farmers' auto wagons in the plant here that was acquired from the Aultman & Miller Company after that concern's failure. Although the real intentions of the company are kept a secret here, it is said on excellent authority that such is the intention. The company will also make a wagon suitable for milk dealers. It has been making a number at Chicago, and it has been found that the wagons take well.

**COACHING RUNNERS WITH A COLUMBIA TOURING CAR.**
Coach Crooks of Columbia University directs the practice of his athletes with up-to-date methods.

## SPRING AUTO SHOW FOR NEW ENGLAND.

SPRINGFIELD, MASS., April 22.—There is every indication of Springfield's first automobile and power boat show being a success. May 25 and June 1 have been fixed as the opening and the closing days, and the location selected is Hampden Park. Here a huge waterproof tent will be erected, divided into nearly eighty stands, each one having accommodation for one car. Exhibition space costs $30 for the side stands and $40 for the center positions. In the way of side attractions there will be races on the mile and half mile track, hill climbing contests and motor boat races on the river adjoining the park, for all of which events valuable prizes will be offered. The general management of the show is in the hands of William E. Dobbins, but a committee from the Automobile Club of Springfield has been appointed to co-operate in the attractions.

## RENAULT RACING RUNABOUTS FOR AMERICA.

At the suggestion of W. K. Vanderbilt, Jr., the Renault firm has decided to construct fifteen special racing runabouts to develop over sixty horsepower, and attain a speed of seventy-five miles an hour. Ten of these have been reserved for Mr. Vanderbilt and his friends, and five are still for sale. The cars will be similar to the racer with which Szisz won the French Grand Prix last year, and will have two-seated racing body.

**BOSTON BRANCH OF THE H. H. FRANKLIN MFG. CO.**
The new store of the air-cooled Franklin is located at 671 Boylston street, in the center of the local trade.

## GOOD ADVICE BY AN AUTO CLUB PRESIDENT.

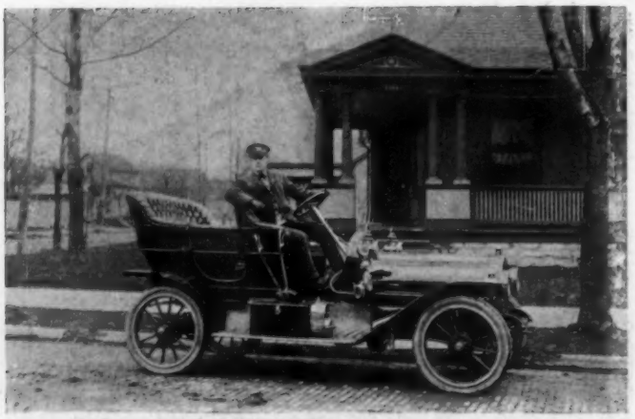
Charles J. Swain, president of the Quaker City Motor Club, Philadelphia, gives the following advice in the course of an article on "Courtesy on the Highway":

"I would lay special stress upon consideration for the farmer. The use of the road is to him a necessity. Through him largely it is maintained. If for no other reason, it were policy to secure his good will. The harboring in his mind of an injury, real or fancied, cannot but incur his enmity, and he has much to forbear at best. To sum up the whole situation, the motorist on the road can ill afford, for the sake of the sport, to make a single bad friend by any act of omission or commission."

## BARNEY OLDFIELD AND HIS GREEN DRAGON.

At San Diego, Cal., on Sunday last, Barney Oldfield drove his Peerless Green Dragon a mile in 54 seconds, which is one second under the circular track record held jointly by himself and Walter Christie. A kick from the starting crank had given Oldfield a bruised arm, but did not prevent him from appearing before the large crowd. A 50-mile race was won by A. B. Daniels with a six-cylinder Stevens-Duryea, his time for the distance being 1 h. 1 min. 20 3-5 sec., lowering the previous mark for stock cars. A 50-horsepower Haynes was second, and a punctured tire spoiled whatever chance it had of giving the winner a harder tussle.

**MISS JULIA SANDERSON TAKES A SPIN IN HER AEROCAR.**
This popular actress, who has recently entered vaudeville, drives daily with her mother, who occupies the tonneau.



R. W. HEY, WHO WILL PILOT THE LONG-DISTANCE LAMBERT.

## TAKING THE LONGEST WAY ROUND.

Rather a unique trip is about to be undertaken by Rodney Wellington Hey, late of Bozeman, Mont., but who for the next year or more will circulate around the borders of the United States in a Lambert friction-driven car. The start will be made June 1 from New York City on what may well be termed the longest continuous American trip possible, as the boundary line is not to be overstepped at any place. The route, as mapped out, includes the Atlantic Coast line to Florida as the first stretch, then around the Gulf along the edges of Florida, Alabama, Mississippi, Louisiana and Texas. At the end of the coast line of the latter State the first step in land will be taken after many thousand miles of coastline, and even at that, the change will merely be from ocean to river for a considerable part of the distance, as the Rio Grande will be followed, and again further west the Colorado will be met and followed part way to its source, where it crosses the southern boundary of California.

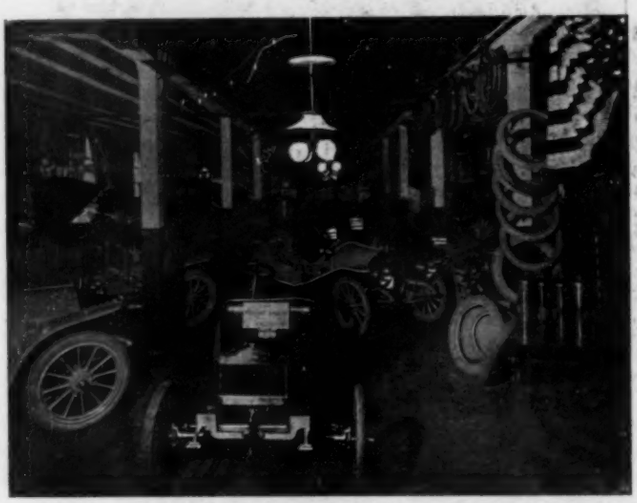
From there on there will be another long stretch of seacoast along the Pacific until Seattle is reached. At the latter place the longest installment of inland travel on the entire journey will be undertaken, following the line of the Canadian boundary eastward until the shores of Lake Superior are met, then down along Lake Michigan to Chicago, from which point the trip east to New York will still be continued as closely as possible to the Canadian border. In addition to forming one of the longest and most arduous tests to which a car has been put, this twenty-thousand-mile trip is also expected to constitute a record in other respects, as no time is to be lost unnecessarily, only brief stops being made in the larger cities along the route. Mr. Hey will be accompanied by a mechanic, and does not anticipate meeting any difficulties that cannot be overcome by grit and a determination to get through in spite of every obstacle.

BUCKEYE MFG. CO.'S FACTORY, WHERE THE LAMBERT IS MADE.

## SUCCESS OF A PRIVATE SHOW IN ROCHESTER.

If you cannot get anyone to help you hold a show, why hold one yourself and show the other fellows how to do it. Such are the sentiments of A. M. Zimbrich, of Rochester, N. Y., and that they are well-founded was recently demonstrated by his carrying them into effect with no uncertain result. Rochester is a busy automobiling center, and Mr. Zimbrich thought it would be only in keeping with its dignity as such to hold a show of its own. He tried to interest the other dealers in the city, but they were not enthusiastic; so, nothing daunted, he went at it himself.

The new establishment, at 45-49 South avenue, Rochester, afforded an excellent place to hold it. Music was provided and souvenirs distributed, and the event was liberally advertised in the local papers. The result far more than exceeded expectations. The salesrooms were filled to overflowing every afternoon and evening, and a number of sales could be traced directly to the holding of the show, besides which a great many people were interested who could not have been met in any other way. Mr. Zimbrich is exclusive agent for the Stoddard-Dayton, Maxwell and Dolson lines, and makes an excellent showing of them, as will be apparent from the accompanying photograph of the interior of his establishment. Judging from the remarkable success which attended his efforts in the show line, there appears to be no reason why any dealer similarly situated should not do likewise.



A. M. ZIMBRICH'S AUTO SHOW AT ROCHESTER.

## ANOTHER FACTORY FOR GRAND RAPIDS.

GRAND RAPIDS, MICH., April 22.—A. C. Menges, formerly of the Harrison Motor Company, is planning to bring out a machine of his own design in the near future, from which it is thought that Grand Rapids will, before long, become the home of another automobile factory. The car is to have several special features, not the least interesting of which is to be a hydraulic self-starting device; it is to be high-powered, and will tip the scales somewhere in the neighborhood of 2,700 pounds complete, listing at $5,000. The company is to be capitalized at $500,000, and expects to undertake the work of getting its car on the market in the near future—probably in time for the Fall shows.

## A DELAWARE CITY'S COMMERCIAL AUTOING.

WILMINGTON, DEL., April 20.—The Delaware Auto Storage and Repair Company, which has a large garage at Eleventh and West streets, has added a carryall to its equipment, a "seeing Wilmington" vehicle, which has become quite popular.

The Dragon Run Dairy Company is using an automobile in connection with its milk and cream business in the city, and other interests will no doubt join the ranks in the near future.

## STRATTON TO MANAGE TRADE ASSOCIATION.

Owing to the great amount of detail work involved in the management of the New York Automobile Trade Association and the fact that the officers of the association have so many other demands upon their time that they are unable to devote any attention to the business of the latter, the need of an executive head for the organization has been felt for more than a year past. Ezra V. Stratton, whose portrait is published herewith, has been appointed to the position with the title of general manager and will act as the executive head of the association so far as the general run of business is concerned, no change being made in the personnel of the officers on this account. Though previously not directly connected with the automobile industry, Mr. Stratton has a wide acquaintance among the trade, gained in his capacity as freight agent for the Seaboard Air Line, where he attended to most of the automobile shipments made to the South for the Florida races annually.

EZRA V.. STRATTON.

## E. R. THOMAS TO MAKE MOTOR CABS.

BUFFALO, N. Y., April 22.—The making of motor cabs and town cars on a large scale is the latest announcement from the E. R. Thomas Motor Company. The plans for the making and marketing of these cars have been under consideration for over a year. During that time Gustave Chedru, head of the foreign engineering department of the company, has been conducting investigations in Paris.

Details of the construction of the new motor cabs will not be given out, according to the present plans of the Thomas company, for several months, but a general description would show that the car has a four-cylinder water-cooled motor, shaft drive, a three forward speed and reverse transmission and a wheelbase of 100 inches. The greatest saving in weight comes in the motor, which, because of the ultra advanced ideas used in its construction, will not weigh, approximately, more than half what the present day motors of about the same horsepower do.

## ALBANY CLUB TO HAVE A ROAD RACE.

ALBANY, N. Y., April 24.—The Albany Automobile Club is up and doing. In addition to its annual run through two or three States, it now proposes to have a road race of its own, and has applied for and secured from the county supervisors permission to close the "River road" from Corning's farm, just south of Albany to Selkirk, in the town of Bethlehem to the southward, the "old stone road" from Selkirk to Becker's Corners, and the road back to point of starting, on the afternoon of September 14, between 3 and 6 P.M. The sheriff was authorized to appoint deputy sheriffs to patrol the course. They will be paid by the club.

The Saxe bill, to permit the formation of companies to insure motor vehicles, is now before Governor Hughes, and will probably be signed this week.

## ABOUT THE MOTOR FUEL PROBLEM.

Although the production of crude petroleum in America is making enormous strides every year, the bulk of this comes from new territories, which yield heavy oils containing little or no spirit, says *The Engineer*. In fact, the fields which have in the past supplied the world with petroleum spirit and high-class illuminating oils are, it is said, failing, so much so that the center of production is no longer in the Eastern States, but lies equally between the Gulf States and California.

## A QUAKER GIRL WHO DEMONSTRATES.

PHILADELPHIA, April 22.—A bright and pretty Quaker girl, Miss Vera Brewster, has opened the way for a feminine invasion of a field of endeavor hitherto monopolized by the male biped—demonstrating an automobile. Miss Brewster last week signed with the Foss-Hughes Motor Car Company here to demonstrate and sell the Baker electric car, which that firm represents in Philadelphia in connection with the Pierce and Cadillac.

Miss Brewster's personality is most charming, and when interviewed by THE AUTOMOBILE representative gave her reasons for "taking up men's work," as some of the local dailies put it. "Why not?" she said. "The occupation requires no special exercise of muscular power. To keep cool; to keep one's eyes open—those are sufficient. And the work is delightful to me. As for learning how to operate an electric car—this car"—and she patted the handsomely upholstered seat beside her—"it is nothing. Any woman with a little determination and an average amount of brains can master it in a day. No; I have no special taste for mechanics. Indeed, my folks had other plans for me. I was educated in a convent in Cincinnati, my birthplace, and afterward attended Mmes. Thavenet and Taylor's 'finishing' school at Neuilly, a Parisian suburb. Then I acquired the higher education fever and prepared for Bryn Mawr. When ready to enter that institution of learning the close application to my studies had so undermined my health that I was compelled to abandon the project. On my recovery I took a course of interior artistic decorating, but again the confinement indoors sickened me, and that I also abandoned. Finally, the necessity of taking up some outdoor occupation forced itself upon me, and after giving the matter no little thought I decided to be the pioneer in a new feminine profession. I argued that if women could be convinced of the ease with which automobiles—electric cars especially—can be operated, many of them would become purchasers. I presented my plan to Messrs. Foss and Hughes, and within a very short time became a qualified demonstrator. While I work hard and the hours are long, the work is charming and healthful.

"I have already discovered that many women who would hesitate at taking lessons from a man demonstrator will eagerly embrace the opportunity of acquiring automobile knowledge from a woman. Hence, I feel that by applying myself to this work and acquiring a knowledge of the car, I can make myself doubly valuable to my employers.

"Philadelphia, with its level asphalt streets, is admirably adapted to the small electric car, and I am firmly convinced that I can arouse among Philadelphia women a desire to own and run such cars. Cleveland has upwards of 200 of these small machines, many of them operated by women. Boston, Washington, Chicago and New York are not far behind. I may be instrumental in getting this city interested. That is what I am working for. You will have to excuse me now. Here comes my 'prospect.'"

WALTER BAKER TOURING IN FLORIDA WITH HIS PEERLESS.

EXTERIOR OF THE MORRIS GARAGE AT WESTCHESTER, N. Y.

# THE INCREASING LIST OF GARAGES.

## Dave H. Morris' Model Fireproof Garage.

Up to a certain point the adaptation of the private stable for garage purposes satisfies all requirements, but it is not long before the enthusiastic autoist finds that such a plan of housing his car has serious drawbacks, not the least of which is the ever-present danger of fire. The majority of stables are of frame construction, and even where stone or brick are employed for the walls, the interior is so generously furnished with combustible material as to render the use of such a building a constant menace. Autoists who have given the subject any consideration have found the best solution in a building specially planned for the purpose, an effective combination both from the artistic and utilitarian point of view being that of concrete and terra-cotta as employed in the model fireproof garage recently erected for Dave H. Morris, at Westchester, N. Y. The attractive appearance of the building is evident from the accompanying photograph, while a second view shows its spacious interior. This measures 17 by 26 feet and is entirely devoted to the cars. There is storage space for two large cars besides a drain table for washing. Back of this main room there are two smaller rooms, one fitted as a workshop and the other housing the heating apparatus for the building. A steel tank, encased in concrete and buried some distance from the garage, stores the fuel supply. On the upper floor are located the chauffeur's quarters. The plans were executed by the New Century Contracting Co., New York City.

### Modern Garage Close to Harvard College.

CAMBRIDGE, MASS., April 22.—The Harvard Automobile Company has just moved into its new garage on Quincy Square. The location is very favorable, being opposite the college yard and near the large dormitories on Mt. Auburn street. Last year the company occupied a small wooden building on the same site, but the demand was so great that it was decided to erect a more suitable structure.

The new garage has a frontage of 125 feet on Quincy Square and is 200 feet deep; it is two stories high, and built of reinforced concrete, fireproof throughout. On the first floor are the main storage room, the waiting rooms and lavatories, and an office overlooking the door by which all cars must enter and leave. Above, the space is given over to storage and repairs. The machine shop is equipped with lathes, planer, shaper, drill press and portable drills, and is in charge of competent mechanics. An air compressor is provided for cleaning and inflating tires. Heating is by steam, with boilers in a separate building. The total capacity is from 160 to 200 cars.

Many Harvard students own automobiles, and quite a number have foreign cars. A look through the garage showed two Panhards, a Brasier and a Fiat. The manager is Roy Faye, who is well known among Boston automobilists. The company has the agency for the Matheson and Atlas cars, and in addition does a large renting and supply business.

### Work Resumed on Portsmouth Garage.

PORTSMOUTH, N. H., April 22.—Work has just been resumed on the new garage here, after being suspended for several months. The exterior of the building is already completed, but the interior—concrete floor, machine shop, offices, lavatories, waiting rooms—will not be ready for occupancy before about the first of June.

The Granite State Fire Insurance Company, which owns the property, has leased it for a term of years to H. L. Beacham, proprietor of a livery stable in this city. Besides being one of the most commodious, the lessee promises that it will also be one of the finest and most thoroughly up-to-date in New England.

The poor accommodations afforded automobile parties in the care and stabling of their cars here, during the last two seasons, have caused loud complaints by tourist and summer resident alike, and, no doubt, the erection of so fine a garage will be hailed with satisfaction by all who patronize it. The Granite State Fire Insurance Company is sparing no expense in the construction of the building, which will involve an expenditure of at least $17,000.

### New Link Between Philadelphia and the Water Gap.

W. H. Pearce, at one time a well-known bicycle racer, and later a salesman and demonstrator for the Philadelphia branch of Thomas B. Jeffery & Co., has just opened a modern garage at Bangor, Pa., having been granted the exclusive agency for the Rambler cars in Northampton County, Pa. The establishment will be known as the Bangor Auto Garage, and will have a first-class equipment of power-driven machine tools with every facility for undertaking all kinds of repairs, Mr. Pearce himself being an experienced machinist. Something like $1,500 have been spent on fitting up this part of the garage alone. In addition to being located on the direct line between Philadelphia and the Delaware Water Gap, one of the most popular summer resorts in that part of the country, the new garage at Bangor is also the last stopping place after leaving Bethlehem, Pa., for Scranton, or Wilkesbarre. That immediate success has rewarded the efforts of Mr. Pearce may be judged from the fact that he has already disposed of something like four carloads of Ramblers, all for early delivery, and some of which are now coming through. During March he averaged three or four cars a week.

HOW THE INTERIOR OF THE MORRIS GARAGE LOOKS.

### Two New Garages Open in Toledo.

TOLEDO, O., April 22.—Last week saw the opening of two new garages in this city. The Toledo Motor Car Company now occupies and conducts the Coliseum garage at the corner of Bancroft street and Ashland avenue in connection with its garage on Madison avenue. The Coliseum garage is the largest in the city and embodies the private stall idea as well as all the other late ideas along garage lines.

The Craig-Toledo Automobile Company, which is manufacturing an automobile by that name at Dundee, Mich., has leased the White garage on Madison avenue. This garage was built for the White company by the Spitzers, but since the entire output of the White factory has been sold the garage was of little use and that company had previously not operated in this city.

### Springfield to Have an All-Night Garage.

SPRINGFIELD, MASS., April 22.—What is known as the Bemis property on Taylor street has recently been acquired by Theodore Geisel. The lot is 127 feet deep, 144 feet on the rear line and 126 feet street front, with a 20-foot passageway on each side. It will be utilized by the Geisel Automobile Company, of this city, for a modern garage, the plans for which are already completed. At present this will only occupy one corner of the property measuring 55 feet front by 127 deep. The roof will be trussed so there will be no posts to obstruct the floor. Later on the building will be extended to cover the entire property. As it is situated close to the leading hotels and just off the main street, transient trade will be catered to, and mechanics kept on duty all day and night. The contract for the construction of the building, which will be of brick and concrete, has already been awarded. The front will be largely composed of plate-glass windows.

### Modern Garage Between Cleveland and Toledo.

ELYRIA, O., April 22.—It will be of interest to autoists generally to learn that another modern station has been completed on the main route between Chicago and New York, and to northern Ohio autoists particularly, as the new Leonard garage in this city is said to be the best between Cleveland and Toledo. The new building is situated on Broad street one block north of Fremont and extends north. It measures 117 feet in depth, and provides about 10,000 square feet of floor space. A modern and completely equipped machine shop capable of executing all kinds of repairs is maintained and an up-to-date service in every respect furnished. H. M. Leonard is the owner, and the establishment is known as Leonard's Auto Station.

### New Garages Springing Up in the Windy City.

CHICAGO, April 22.—Within the past few weeks there has been unusual activity in the fitting up of new garages in anticipation of the coming season's business. One of these, known as the Chicago Auto Garage, which has located at 3210 N. Clark street, has been granted the sub-agency for the Reo and Premier cars, in addition to which it will carry on a general garage business. A few blocks south another general garage and salesroom has been opened at 3096 N. Clark street. This is owned by M. L. Barrett, for whom the building was specially erected. It measures 50 by 116 feet and is modernly equipped throughout.

## IN AND ABOUT THE GARAGES.

**Savannah, Ga.**—A garage and repair shop has been opened at 314 St. Julian street, west, by F. C Kramer and G. W. Wroten, who have recently formed a partnership.

**Kansas City, Mo.**—A new garage has been opened here by the Kaw Valley Auto Company, agents for the Premier, and the Mason Car Sales Company, at 3131 Main street.

**Des Moines, Ia.**—A garage has been opened by the Goodwin Automobile Company, which has taken the agency for the Rambler and Mason cars. The building is located at 612-616 Mulberry street.

**Champaign, Ill.**—The Champaign Automobile Company, of this city, has been incorporated to establish a garage. J. C. Richmond and Manford Savage are the interested parties.

**Huntsville, Ala.**—An up-to-date garage is to be established by the Huntsville Motor Car Company, which has leased for a term of years a new building in course of erection on Gallatin street. The building is of concrete and iron and brick.

**San Francisco, Cal.**—Under the title of the Mission Garage, a large establishment has been opened to do a general garage business at 611 Valencia street, between Seventeenth and Eighteenth streets, by D'Arcy, Scott & Co. It is one of the most modern establishments of its kind that the city can boast.

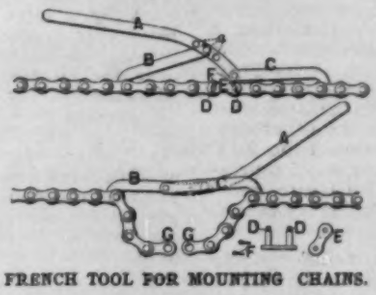
**Grand Rapids, Mich.**—With the completion of the establishment of the Luce-Banks Company, on North Division street, Grand Rapids may well lay claim to growing prominence as an automobiling center, for this makes her eighth garage, and some of them are establishments of imposing proportions for the size of the city.

**Montclair, N. J.**—Under the management of W. H. Higgins, Jr., the garage formerly operated by the Montclair Auto Station has been reopened, and will be run by a new company composed of Montclair business men; the members are C. D. Vreeland, W. H. Higgins and W. H. Higgins, Jr., all of upper Montclair. The company intends to sell machines as well as storing and repairing them, and expects to obtain the agency for a popular car in the near future.

**Crown Point, Ind.**—That road and street improvement and automobiling go hand in hand was never better illustrated than in this part of the State of Indiana, where, as the result of general attention to improvement on the part of the authorities, C. M. Baker, who is the local agent for the Rambler cars at this place, reports that interest in automobiling has increased considerably. The outlook for a successful season was never better, says Mr. Baker, much of it due to the prospect of better roads.

## TOOL FOR MOUNTING SIDE CHAINS.

Dismounting and remounting the side chains of a big car is not the cleanest of jobs, nor the easiest if you are single handed. If the chain is at all tight, the operation of bringing the two ends of the chain together in order to pass the bolt through is one that requires some patience. To simplify this task a French chauffeur has devised a simple tool, the illustration of which is reproduced below from *Omnia*. It consists of three metal arms, two of which, *B* and *C*, have their extremity curved to hook around the links of the chain. *A* is the lever operating the tool. The arm *C* is hinged to the extremity of the lever *A*. The arm *B* has a stud riveted into its end, allowing it to be placed in any of the holes drilled in the lever, thus giving a longer or shorter range of action, as required. It will be noticed that the lever is slightly curved, this being necessary in order that it may remain in position when the tool is in use, as shown on the lower sketch. Any number of holes may be drilled in the lever, but they should always be in the curve. The tool is one that any mechanic can make, and the labor spent in constructing it will be amply repaid by the value of the instrument in every-day work. It will certainly prove a great time saver.



FRENCH TOOL FOR MOUNTING CHAINS.

# BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

All the 300 Frontenac touring cars to be made by the Abendroth & Root Manufacturing Company, of Newburgh, during 1907, will be equipped with Trauffault-Hartford shock absorbers.

Owing to increase of business, the Tuthill Spring Company, of Chicago, has decided to call a meeting of stockholders to vote upon the question of increasing the capital stock from $50,000 to $100,000.

The old-established carriage building firm of S. C. Pease & Sons, Merrimac, Mass., has entered the automobile field and is now prepared to do a big business in automobile bodies, particularly in limousine and landaulette styles. All body repair work is undertaken.

The F. B. Stearns Company of Cleveland a few days ago delivered to former Governor Myron T. Herrick of Ohio one of the finest machines ever turned out of the factory. It is a large seven-passenger Pullman body touring car, handsomely trimmed and equipped.

So many applications for work at the new Rainier factory at Saginaw having been received at the New York office, the company has made the announcement that such applications should be directed to James G. Heaslet, factory manager, 820 West Warren avenue, Detroit, where they will be given due consideration.

A. R. Bangs, who, since he retired from the Franklin agency in Boston, has been busy in his machine shop, promises the first public view of the completed Viking next month. The machine will have four cylinders, will develop 40-horsepower, will have bevel gear drive and 120-inch wheelbase. Selling price will be $3,000.

Contracts involving an expenditure of $100,000 have been let by Thomas H. Midgley, consulting engineer of the Rubber Goods Company, for a large addition to the plant of the Midgley Manufacturing Company, on Dublin avenue, Columbus, O. The present area of the plant, used for the construction of wheels, rims and other parts of automobiles, will be increased by more than two-thirds.

There is no mystery about starting a motor from the seat on the spark. The explanation is that so long as compression is held in a cylinder, the spark can be used to ignite the charge and start the motor. At St. Louis, the other day, it is reported that a Winton Type XIV was started from the seat on compression that had been held an entire week, as the result of perfect fitting cylinders, pistons and rings.

A man who has been a member of the American Automobile Association since it was launched, made a pat remark recently when he said that any motorist who does not join the national body is no better than a tax-dodger who enjoys the benefits of municipal work and shirks contributing his share. He has representation without taxation, and, similarly, all motorists share to some extent in the good work done by the A. A. A.

Indestructible steel wheels, made by the Turner & Fish Company, Chicago, are used on the somersault automobile in the thrilling feat at the Ringling Brothers' circus. The landing of the car produces a crash of 9,000 pounds, the speed being equal to 42 miles an hour, and the car weighs 2,000 pounds, dropping in midair 30 feet after the somersault. The wheels were regular 16-gauge pleasure car wheels.

C. N. Sauerbach, the exclusive agent of the Mitchell Motor Car Company in Europe, will place his repair shop at the disposal of American tourists and those competing in the American Gold Cup Tour this coming season. Any spare parts of automobiles sent to the Mitchell Car Agency, 27 Rue d'Aboukir, Courbevoie, near Paris, France, will be taken care of and forwarded, upon request, to any individual owner of such parts. Mr. Sauerbach will also supply information which might interest foreign tourists.

The F. B. Stearns Company of Cleveland will increase the capacity of its factory on Euclid avenue by the addition of about 10,000 square feet of floor space the coming summer. Later additions will be made that will double the capacity. The company has ordered a number of German gear cutting machines, such as cannot be found in this country. Roy F. York, sales manager of this company, is now in San Francisco, and will go on up the coast to Seattle before returning to the home office.

At the annual meeting of the stockholders of the Joseph Dixon Crucible Company, of Jersey City, N. J., the old board, consisting of Edward F. C. Young, John A. Walker, Edward L. Young, William Murray, George T. Smith, Joseph D. Bedle and George E. Long, was unanimously re-elected. The board of directors re-elected the former officers, namely, E. F. C. Young, president; John A. Walker, vice-president and treasurer; George E. Long, secretary. Judge Joseph D. Bedle was also re-elected as counsel.

George K. Wheeler, sales manager for Columbus Electric, made by the Columbus Buggy Company, Columbus, O., has just finished one of the longest trips made by a sales manager, having since November 1, 1906, visited every city in the United States and personally looked over the situation as regards the possible market for electric carriages. At the present time the Columbus is represented in the majority of the cities of the United States. The factories are making large shipments daily to all portions of the country, and have recently put up an addition to the plant to take care of the increased automobile business.

Progress on the two Dragon racers which are being built for the Vanderbilt Cup race is being reported daily to the officers of the Dragon Automobile Company. According to these reports, it is apparent that the racing Dragons will be ready on schedule time, May 15, which is the date set for completion of tests on the finished engines. July 1 is the date arranged when cars will be running on the road, and the company is now giving considerable thought to the matter of drivers for these cars, but as yet no selections have been made. A special building on the factory grounds has been set aside and is being prepared to be used solely for work on the racing cars.

The most noticeable feature of the past season, according to F. A. Babcock, president of the Babcock Electric Carriage Company, is the increase in the number of women who drive their own cars. The increase is probably more noticeable in the electric line than in gasoline or steam. There are no complications, there is no need of a chauffeur. Madame can wear her nicest and daintiest frocks, and she does not have to strain her voice to carry on a conversation with her companion. All these things appeal to a woman, and there is not a lady who ever rode in an automobile who has not hopes that some day she can sit at the wheel and drive her own car over the boulevards and through the parks.

## COMING TRADE REMOVALS.

The Olds Motor Works has arranged to take over the agency of the Olds machine, which has been conducted by the Bailey Company on Prospect avenue, Cleveland, O., under the name of the Oldsmobile Company. The room on Euclid avenue recently vacated by the Aerocar Company has been secured and a complete sales room and repair shop will be established. The location is in the midst of the motor colony of the city.

The H. J. Koehler Sporting Goods Company has just executed a long lease for the premises at the northwest corner of Fifty-fourth street and Broadway, New York City, where the Buick agency will be carried on, the old establishment having been located a few blocks further down Broadway for several years past. In addition to this, branches are maintained at Newark, Paterson, Montclair, and East Orange, N. J., for the agencies of the Buick, Corbin and the Pope-Waverley electric cars.

Owing to the great increase in the demand for their specialties during the past year, both the Crown Battery Company and the Tire Safety Device Company, the former of which has been located at 47 Warren street, New York, and the latter at 208-14 West 124th street, will remove to a new factory at 992 Southern boulevard. With the added facilities installed in the new establishment, the plant will have a capacity four times greater than that previously enjoyed. C. R. Bissell is vice-president of the Crown Battery Company and general manager of the Tire Safety Device Company.

Another May 1 removal will be the shifting of the Diamond Rubber Company from its old quarters to new and more spacious surroundings in the new Motor Mart at 1876 Broadway. They have been finely fitted up under the direction of Theodore Wiegele of the home office, who has come on to assist H. J. Woodard, the New York branch manager. Ever since the beginning of the industry the Diamond Rubber Company has had a branch at 1717 Broadway, so that with its removal further up-

town a landmark will disappear. The New York headquarters, for many years at 78 Reade street, will be consolidated with the new uptown store.

Next week the New York branch of the Corbin Motor Vehicle Corporation will take up new quarters in a prominent location on New York's automobile row. It will occupy the northerly end of the big store in the building of the American Locomotive Auto Company, at 62d and 63d streets and Broadway, the latter concern maintaining a large salesroom for their American Berliet cars on the same floor. The old Corbin quarters at 1779 Broadway will be given up on May 1. The new establishment affords a plate glass frontage of 40 feet, so that the Corbin will be prominently displayed. In line with its well-established policy at branch houses, the Corbin company will maintain a complete repair department.

## NEW AGENCIES ESTABLISHED.

One of the first active steps taken by the new management of the Acme Motor Car Company, of Reading, Pa., since its reorganization by H. M. Sternbergh, who is now its president, has been the appointment of Theodore E. Schultz as New York representative. Mr. Schultz's establishment is at 1843 Broadway.

Up to date the Forest City Motor Car Company of Massillon, O., manufacturers of the Jewel automobiles, has established no less than forty-one agencies throughout the country. In addition to locating in most of the principal cities from coast to coast, a large number of agents have also been appointed in smaller towns, as well as a general foreign agency at London, Eng.

A. E. Schwartz, the representative abroad for the American Motor Car Manufacturers' Association, has formed the American Auto Supply Company in Paris, with headquarters at 102 Rue la Boetie. It is expected that the place will become headquarters for Americans while in Paris, as Mr. Schwartz is well informed on foreign conditions, including licenses, passports, and similar necessities for travelers.

The Michigan Storage Battery Company, with main offices and works at Detroit, Mich., have just opened a New York branch at 2330 Broadway, near Eightieth street. Complete stocks will be carried at all times, in addition to which a thoroughly-equipped charging and repair station will be maintained. George S. Morrow has been appointed manager of the new branch house, and will be assisted by a number of expert battery men sent direct from the factory.

The Dupont Garage Company, having acquired the Washington branch of the Electric Vehicle Company, has become the agent in that territory for the Columbia cars, both electric and gasoline. The Rambler and Cleveland lines, formerly carried by one of the stockholders of the company, have been discontinued. In addition to its main establishment at 2020 M street, Northwest, the company will also continue its commercial branch in the old Panorama Building at Fifteenth street and Ohio avenue.

## PERSONAL TRADE MENTION.

R. D. Aldrich has resigned his position as manager of the New York branch of the Rose Manufacturing Company to become sales manager of the Twentieth Century Manufacturing Company, 19 Warren street, New York City.

A. H. Dorsey, who was formerly connected with the sales department of the Harry Fosdick Company of Boston, has been elected vice-president and general manager of the United Motor Car Company of Philadelphia, which is agent for the Thomas car in that city.

It has been erroneously stated that George C. John has severed his connection with the St. Louis Car Company, makers of the American Mors. It seems that while F. J. Pardee has been made sales manager and will remain in charge at the factory, Mr. John will continue his connection with the St. Louis company.

J. H. McDuffee, of the McDuffee Automobile Company of Chicago, which handles the Stoddard-Dayton, De Luxe and Kisselkar in the west, has gone to Arizona for several months respite from business. Mr. McDuffee has been in poor health for some time, and has been advised by his physicians to rough it for several months away from the haunts of civilization.

Frank S. Corlew has announced his resignation as vice-president and manager of sales of the Dragon Automobile Company of Philadelphia, to take effect May 1. Mr. Corlew will announce in a short time his plans in connection with the automobile business which he states will be of interest not only all over the country, but especially so to the New England trade.

F. G. Carrie, representing the Electric Vehicle Company of Hartford, Conn., will have headquarters in Havana, Cuba, for the next few weeks, where he will show and demonstrate the high and medium-powered Columbia gasoline cars and the Columbia electric victoria phaeton. Mr. Carrie for some time past has been connected with the New York branch of the Electric Vehicle Company.

In order to properly handle the increasing sales, President Horace Delisser, of the Ajax-Grieb Rubber Company, has appointed H. M. DeSilva and R. S. Ireland on the selling force for Ajax tires. Both men are well and favorably known in the trade, having for years been connected with the International Rubber Company. Mr. DeSilva will cover the western territory and Mr. Ireland will devote his attention to the southern trade.

A. L. Kull, for the past few years the well-known representative of the Wayne in New York City, and who lately formed the A. L. Kull Automobile Company, the present representative for the Dragon and Wayne cars, has succeeded Frank S. Corlew as sales manager for the Dragon Automobile Company. Mr. Kull is well known as one of the most active representatives in the automobile trade, and has the reputation of being a "hustler" of the most advanced type, and the aggressive policy of the Dragon company will be kept up in every detail of the selling department.

## RECENT TRADE PUBLICATIONS.

A chapter of accidents and facts are given in the neat folder issued by the Fisk Rubber Company, Chicopee Falls, Mass. The booklet presents extracts from daily papers of automobile accidents caused through tires which burst, and shows how they could have been avoided by the use of the Fisk. There is also a description of how to remove and attach a Fisk tire and an account of the various sundries handled.

Two new catalogues have just ben sent forth from the Cadillac Motor Car Company's headquarters at Detroit, Mich. Models K and M are treated in one, and the four-cylinder Model G in the other. A feature of both publications is the excellent half-tone illustrations showing the various mechanical parts of the Cadillac. With the aid of these and the explicit text matter a good knowledge of the cars can be obtained. The booklets are excellently printed in two colors, and smartly bound.

As an elegant piece of designing and an example of skilled typography, the publication from the George N. Pierce Company is far ahead of the usual trade literature. It deals with the new factory just built for the Pierce Great Arrow at Buffalo, N. Y., on the Kahn system of reinforced concrete. This method of building gives a structure as substantial as though carved out of solid stone, fireproof, and possessing the granite-like qualities of concrete with the elasticity of steel. A large number of excellent illustrations show the building in course of construction and several full page illustrations give an idea of the tremendous area covered by the plant.

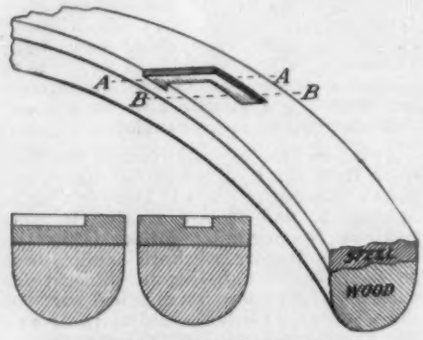
## FAMOUS PRESSED STEEL PLANT.

Cleveland can boast one of the largest steel-pressing plants in the country, in the shape of the establishment of the Hydraulic Pressed Steel Company, Cleveland, which makes a specialty of automobile frames and stampings. It is claimed to be the first large plant of the kind especially erected for the purpose, and is, in consequence, equipped throughout with the most modern machinery for turning out work of this class, the main press-room measuring 80 by 200 feet. Some idea of the extent of the factory may be obtained from the accompanying photograph showing a view of it. The concern is backed by well-known Cleveland capitalists, and is managed by James H. Foster, who is also vice-president of the company. The sales end is in charge of Roger B. McMullen, formerly with the A. O. Smith Company.

FACTORY OF THE HYDRAULIC PRESSED STEEL COMPANY, CLEVELAND, O.

# INFORMATION FOR AUTO USERS.

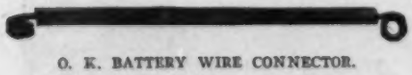
**Presto Detachable Rim.**—This is a device of that class of things mechanical which have the merit of using well tried and thoroughly proven details of construction. The rim carrying the shoe and tube is of the regular standard clincher construction to which is added a number of lugs on its under face. These




SECTIONAL VIEWS OF PRESTO RIM.

lugs are really nuts that are permanently screwed onto inwardly projecting flat headed bolts countersunk into the rim. There are from six to eight of these nut lugs, according to the size of the wheel. Permanently mounted on the wood felloe is a steel band and in this band are cut L-shaped slots agreeing in number with the rim lugs. These right angled slots have their stems running parallel with the rim sides, while the "foot" sections of the slots come out to one edge. It will be seen that this combination gives a series of bayonet clutches. The stems are slightly tapered toward their closed ends to give a wedging effect. At opposite points in the felloe are two spring plunger bolts that act as locks when the rim is in place, the rim having a series of holes extending around it to take these plungers at any point the rim may be put on. To remove a rim, withdraw the two plungers, give them a quarter turn to prevent them drawing back, move the detachable rim backward about one inch and then toward the operator. The act of replacing is obviously the reverse of the above. By actual demonstration the rim was taken off and fully replaced, time and again, in eight and nine seconds. It is not necessary to match a particular lug on the rim with a particular bayonet slot in the felloe, all these being interchangeable. To take care of this condition, as well as to permit either edge of the rim being started on, there are twice as many plunger holes in the rim as there are lugs. Further information regarding the device may be had from Presto Detachable Rim, 403 Lincoln Trust Bldg., Jersey City, N. J.

**A Useful Connector.**—The guaranty given with the O. K. Connector, as manufactured by the O. K. Connector Com-



O. K. BATTERY WIRE CONNECTOR.

pany, 51 Waldo street, Worcester, Mass., is that it will not wear out, and that it will show more amperes than others, because of it having a spring tension, making a positive contact. With this simple little article, a sample of which may be obtained by mail for ten cents, there are no broken or loose connections, and no need for the use of pliers.

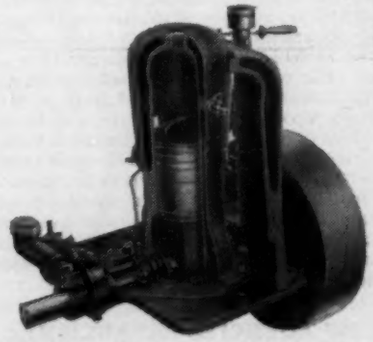
**"Autoleum" Fireproof Gas Engine Oil.**—Realizing the absolute necessity of a special grade of lubricating oil for each particular purpose, and no piece of machinery abounds in different requirements of lubrication more than the automobile, A. W. Chesterton & Company, 64 India street, Boston, Mass., make a specialty of different brands of their "Autoleum" oils for different uses. Particularly such as are required for the high temperatures of the air-cooled motors, also for water-cooled motors, beside "Autoleum" crankcase oils, lubricating greases and the like for both gas and steam engines. In addition, they carry a full line of lubricating accessories.

**Automobile Goggles.**—There are six distinct styles of automobile goggles manufactured by the Globe Optical Company, of Boston, Mass. All the different types are fitted with ground plano

GLOBE AUTOMOBILE GOGGLES.

lenses without focus or power. If desired, however, they can be ground to correspond with prescription of the wearer's glasses, thus avoiding the inconvenience of wearing both glasses and goggles. The lenses are also arranged to give extremely wide range of vision. In four of the styles this is accomplished by using lenses bent to conform with the curvature of the face. The others are of popular four-glass style. Smoke or amber-tint lenses, specially recommended because they protect the eyes from the glare of the sun and improve the acuity of the vision, are also supplied. The four-glass goggles have a patented arrangement for removing lenses. A type specially recommended for ladies is the collapsible, with silk, velvet or chenille binding, with a strap allowing variation of the distance between the eyes. All types are supplied complete in leather case.

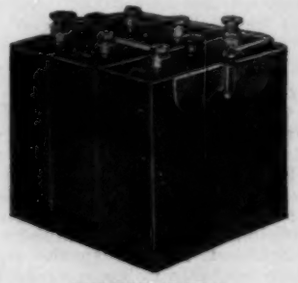
**Ferro Auto Marine Engines.**—There are a number of original and distinctive features in the Ferro two-cycle auto marine engines built by the Ferro Machine and Foundry Company of Cleveland and 79 Cortlandt street, New York. They are made with one, two and three cylinders, and in sizes from 1 1-2 to 25 horsepower. The individual cylinders are made with a flange increasing from bottom up, carry no shaft bearings, have no joints under pressure, no water pipes or visible external connections. These features will be noted from the il-



FERRO TWO-CYCLE AUTO-MARINE ENGINE.

lustration. The pistons have four rings and double piston pin bearings, piston, rings and cylinders being ground to an absolute fit. There is no bearing at upper end of connecting rod, the hollow piston pin being rigidly clamped to rock with it, thus giving increased strength and almost double bearing surface. Crank pin bearing cap at lower end is adjustable. Valves are large and adjustable, and there are no pipes to engine whatever. Water enters each cylinder jacket separately near exhaust by hidden branch passage leading directly from large main to pump. Two complete sets of hardened steel ball thrust bearings, one on forward and one on after end of crank shaft prevent any strains on cranks, connecting rods or pistons. Lubrication is assured by a battery of sight-feed valves supplied with oil from a pressure-feed reservoir. The Ferro quick-starting carbureter is of a special type, designed for marine service and conditions. By using the lever-operated compound throttle instant changes of speed can be obtained, varying from 150 to 900 revolutions. With all except the smallest engines the Ferro exhaust silencer is supplied, consisting of exhaust header and condenser silencer combined.

**Rex Igniters.**—In the 1907 type of Rex igniters, manufactured by the New England Motor Company, Lowell, Mass., a storage battery has been designed which is particularly adapted for ignition work. The grid is of such a form as to absolutely lock the active material in place



THE REX IGNITER.

and prevent it dropping out when in service. The plates are assembled in celluloid jars, each jar having a separate cover. By the use of separate covers, entirely insulated from one another, the charge is retained for an indefinite period. The connection which extends from

the inside of the cells to the outside is of such a design as to reduce corrosion to a minimum. As far as possible brass and nickel parts have been eliminated. All parts are manufactured by the company, thus making it possible to assure the quality of the product with much more certainty than if the work was undertaken by a number of independent firms.

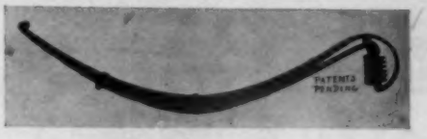
**New Weston Multimeter.**—This instrument, produced by the Weston Electrical Instrument Company, of Waverly Park, Newark, N. J., is one which will serve the purposes of a direct current voltmeter, milli-voltmeter, ammeter, milammeter, ohmmeter, ground detector and wheatstone bridge. The part of the multimeter designed to be used for the purposes mentioned is similar to the Weston portable direct-current instruments, but differs from the regular forms in that a special movable coil is employed in the multimeter. The calibrated scale of the instrument has 160 divisions,

WESTON MULTIMETER, WITH COVER RAISED.

with the zero placed at 10 divisions from the end, so that when the instrument is used as a galvanometer in connection with the bridge, both positive and negative deflections are observed. The wheatstone bridge, which forms part of the multimeter, consists of a rheostat with three groups of coils, adjusted respectively to units, tens and hundreds, aggregating 999 ohms, and a set of five ratio coils. Many novel features are embodied in its construction. All conductors and plug receptacles are placed under, instead of upon, the rubber top.

**Puncture Proof Tire Filler.**—"Elastro" is the title of a resilient compound for filling pneumatic tires, in order to do away with the possibility of punctures and other mishaps that may befall the tire, whether on a car, motorcycle or even a bicycle. It is a plastic substance injected into the tire while warm and in a liquid state by means of a pump or air compressor and special machinery designed for the purpose. The amount of pressure required is regulated by the weight of the car, so that a tire filled with Elastro lacks none of the features of the regulation pneumatic tire, but cannot flatten or collapse, remaining the same until either the shoe and tube, or both, are worn out. The nature of the compound is such that the makers guarantee it proof against heat and cold, and will, moreover, continue to give satisfactory service even though the tire be full of punctures or cuts. It is made by the Elastro Manufacturing Company, Hartford, Conn., and it is the purpose of the latter to sell territorial rights for the exclusive use of the compound on a royalty basis, supplying the necessary machinery and equipment. Ernest Cady, manager of the agency department, is also located in Hartford, at 26 State street.

**An Improved Spring.**—Quite a novel and yet extremely simple method of improving the suspension of a car is being marketed by the Garden City Spring Works, 20th and Purple streets, Chicago.



NEW GARDEN CITY SPRING.

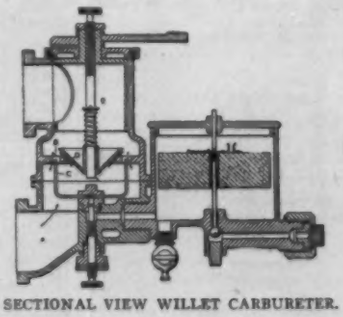
As will be plain from the illustration of the device, its installation calls for no change either in the frame or the hanger. Although shown in connection with a semi-elliptic spring, it is also equally applicable to the full elliptic type. Some of the advantages claimed for it are the reduction of the recoil or rebound by lengthening and softening the spring, so that the car will ride as easily with the driver alone as with the full complement of passengers. It is the invention of D. R. Close, and patents have been applied for.

**Atwater-Kent Spark Generator.**—While making its famous non-stop record of 6,000 miles last winter, the Thomas Flyer was also making a record performance for the Atwater-Kent spark generator with which it was equipped. Throughout the entire run it was unnecessary to give the spark generator any attention whatever, and the entire distance was made on a single set of six dry cells, which shows that the maker's claims for very largely reduced

THE ATWATER-KENT SPARK GENERATOR.

battery consumption are well-founded. As shown by the illustration picturing it herewith, the entire system with the exception of the batteries and plugs in the cylinders is comprised of a single, self-contained unit which forms a fitting ornament for the dash of any car. There are no vibrators, commutators or moving wires, and every part of the system is immediately accessible for inspection without the necessity of leaving the seat. The spark maintains a constant value, regardless of the speed of the engine, which is a decided advantage for easy starting. Moreover, there is only one adjustment necessary, and the circuit is broken in but one place, so that but two platinum contacts comprise the entire wearing parts of the system. The engine may be started by pressing a button, and the driver is also enabled to test the running of each cylinder separately. The model shown is that for four-cylinder engines, but types are also made for three and six-cylinder engines. It is made by the Atwater-Kent Manufacturing Works, 116 North Sixth street, Philadelphia.

**The Willet Carbureter.**—Easy starting and ability to use low-grade fuel with the same facility as the most expensive are two attributes that the autoist holds in the highest esteem in a carbureter, for failure to start is probably the greatest of bugbears that afflict the driver, and



SECTIONAL VIEW WILLET CARBURETER.

frequently it is impossible to obtain anything better than gasoline of a grade that would not be considered for a moment under ordinary circumstances. Add to these the ability to develop plenty of power when throttled way down and to show up at its best when hill climbing, and a combination that is hard to beat is found. It is represented by the Willet carbureter, made by the Willet Engine and Carbureter Co., 764 Ellicott Sq., Buffalo, N. Y. The small number of parts used in its construction as well as the simplicity of the latter will be apparent at a glance at the accompanying sectional elevation of the carbureter. The gasoline inlet and float chamber are shown to the right with the air intake at the left. Instead of the usual single nozzle there are a series of six small tubes, as indicated at C, which form individual nozzles and are fed by the inlet at the bottom, which is regulated in the usual manner. After entering the air passes through a series of small circular openings at B; owing to the restricted area of the latter and the close proximity of the air stream to the jets, considerable gasoline is picked up even at slow speeds. An inverted cone-shaped valve D controls the auxiliary supply of air which is thrown into immediate contact with the vapor-laden air coming from the jets, this arrangement making the carbureter very sensitive. The mixture passes to the chamber E, in which is located a rotary throttle of the usual type. The Willet carbureter is said to have proved very successful in connection with the two-cycle engine.

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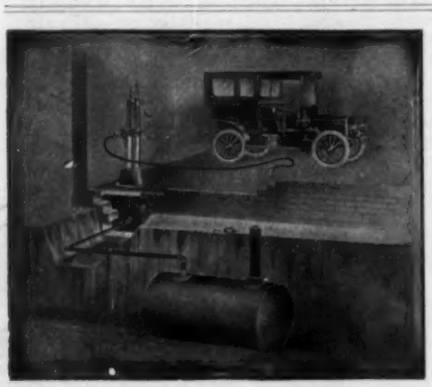

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